

Railway Age

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Holes Above and Below the Water Line

RAILROADS are not commonly compared to the shipping industry although some of them own and operate considerable marine equipment. In spite of general unfamiliarity with marine matters, however, railroad men may perhaps draw a lesson from the following truism of the sea: When a ship develops a hole in her sides *below* the water line, the captain has it repaired at once—or the ship sinks; when the hole occurs *above* the water line, repairs may be delayed without serious consequence—until a storm comes. Then, however, it may be too late and result in foundering and loss of the ship. Is there not a direct and fairly accurate analogy between this ship and railroad shops and engine houses? For years the latter have been required to handle increasingly heavy and complicated locomotives with facilities in general improved only just enough to service sufficient power for moving the traffic. Are not railroad managements to this extent like the ship captain who repaired holes *below* the water line in order to keep his ship afloat? Evidence is not lacking to show that in many shops and engine terminals worn-out machinery, lack of labor saving equipment and particularly outgrown layouts result in excessive cost of locomotive servicing operations and, moreover, provide no reserve capacity for a peak load or other emergency. Cannot a lesson well be drawn from the unfortunate example of the ship captain who failed to give adequate attention to holes above the water line until overtaken by the storm?

An Example of Co-operation

IT has sometimes been said that the railroads show an interest in projects for improved service and facilities fostered by communities on their lines only when pressure of real or potential competition affords an added incentive. That this is not always true is demonstrated by the action of the Union Pacific in building 30 miles of new line to provide Boise, Idaho, with through passenger service at the behest of the people of that city. As described in the article appearing in this issue the original line of the Oregon Short Line, which misses Boise by some 20 miles, is shorter and has better grades and alinement than the new line recently completed through the capital city. The Union Pacific system has no competition for other than purely local business in Idaho and for many years has served Boise by a branch line. But in spite of its thoroughly entrenched position it agreed to make an expensive improvement which does not offer any immediate prospect of increased revenue. However, this does not mean that the line was built solely for the purpose of gaining favor with the people of the state, for in spite of the physical obstacles encountered, the new line has been designed to conform to the general program for increasing the capacity of the Oregon Short Line unit of the

system. The gradients on the new line are such that it may be used readily for westbound freight movements whenever traffic density demands, in addition to its primary function as a through passenger line.

A Professional Society for Transportation Men

THE British Institute of Transport, unlike the National Transportation Institute which was organized in this country, is primarily a professional society rather than a research organization. It corresponds more or less to the various engineering societies in England, which in turn are similar to those on this side of the Atlantic. It is the only organization which covers the entire transportation industry—railway, highway, water and air—and we do not have its counterpart on this side of the Atlantic. The Institute does not conflict with the various societies in the specialized fields in transportation, which correspond roughly to the various divisions of the American Railway Association and to such societies as the Traveling Engineers Association over here. Its relation to these societies is equivalent to that of the American Society of Civil Engineers to the American Railway Engineering Association on this continent. Anyone familiar at all with these two societies knows that both have useful functions to perform and that to praise the effectiveness of the former is not to detract from the reputation of the latter. And the position which the A. S. C. E. or the A. S. M. E. hold in the engineering profession in this country is just that at which the Institute of Transport aims in the whole transportation industry in Great Britain. It aims to provide a common meeting ground for all the forms of transportation and, more than that, to regulate its membership in such a manner, removing entirely the automatic *ex officio* character usual in the specialized societies, that to be a full-fledged member will be an honor worth working for. Beginning next fall it is likely that admission to membership in the Institute will be obtainable only on the results of an examination. The Institute already has done a great deal in mapping out courses of study for holders of junior memberships, most of which are given in co-operation with existing educational institutions throughout the country. Perhaps the attaining of full vigor by this Institute may be slower than its founders could wish. Such a society, however, prospers in proportion to the prestige which it acquires and prestige is always of slow growth. Even if the society be small—yet if it does thorough work and holds up high standards of membership, recognition will eventually come to it. It cannot spring full grown from the brain of its founder, like Athena from the head of Zeus. Nevertheless, the Institute of Transport is a promising adolescent and we recommend that delegates from this continent to the International Railway Congress in

London this summer make some inquiries about it. The transportation industry on this side of the Atlantic could afford to encourage an organization which would foster real scholarship in transportation studies on the part of its younger men. It would benefit if its leaders and technicians could work in closer accord with those of all branches of the industry. Perhaps such a society as the Institute of Transport can secure these things. When our delegates return from London, let us ask them.

Decline of Railroad Mileage

APPARENTLY the decline in railroad mileage in the United States, which began in 1916 and reached its maximum in 1921 and 1922, has almost stopped. The detailed railway statistics of the Interstate Commerce Commission for the year 1923, which have just been published, show that in that year the mileage torn up exceeded the mileage built by 191 miles. Statistics compiled by the *Railway Age* indicate that in 1924 the mileage built somewhat exceeded the mileage torn up. The net return earned by the railways in 1923 and 1924 was larger than in the two preceding years, and it would seem from the available statistics that this has resulted in some lines being kept in existence which undoubtedly would have been torn up except for the improvement in earnings that has occurred.

The total decline in mileage in the country between June 30, 1916, and December 31, 1923, is shown by the statistics just issued by the commission to have been 4,029 miles. The decline in the last six months of 1916 was 214 miles; in the year 1917, 411; in 1918, 97; in 1919, 377; in 1920, 307; in 1921, 1,669; in 1922, 763, and in 1923, 191. The decline in the country's mileage was the largest in 1921 when the percentage of net return earned by the railways on their property investment was the smallest ever known.

There were twenty-three states in which mileage declined in 1923 and twenty-five in which it increased. The largest declines were in Arkansas, 117 miles, and Georgia, 125 miles; while the largest increases were in Utah, 62 miles, and in Wyoming, 40 miles.

The declines in mileage between June 30, 1916, and December 31, 1923, in some of the states were relatively very large. The states which in these years suffered a net loss exceeding 200 miles were the following: Colorado, 605; Louisiana, 520; Georgia, 414; Arkansas, 378; Michigan, 332; Minnesota, 324; Indiana, 278; Ohio, 256; Mississippi, 223; Pennsylvania, 221; Missouri, 205, and Washington, 203. The largest gains in mileage made during this period were in Oregon, 280, and Texas, 275 miles.

The statistics of the commission disclose the interesting fact that owing to the decline that began in 1916 the amount of railroad mileage in the country at the end of 1923 was almost exactly the same as on June 30, 1913, over ten years before. The change in railroad conditions that has occurred in the United States within the last twenty years is strikingly illustrated by the fact that in the decade 1903 to 1913 railroad mileage increased 42,245 miles, while during the decade ending with 1923 it did not increase at all. It is significant in this connection that in the ten years ending with 1913, when mileage increased 42,245 miles, the average return earned by the railways on their property investment was approximately 5.26 per cent, while in the ten years ending with 1923, when mileage did not increase at all, the return earned averaged only 3.74 per cent on property investment.

The Commission and the Law

GOOD laws are desirable, but the effects produced by a law depend on how it is administered. The rate-making provisions of the Transportation Act are fair and constructive, but up to this time they have not been administered in such a way as to produce their intended results.

This law imposes certain duties upon the railways. It is a function of the Interstate Commerce Commission to see that the railways perform their duties. The commission in some instances has condemned individual roads for alleged failure to perform their lawful duty. For example, whether justly or not, it condemned certain railways for contracts made by them for the repair of their equipment. On the other hand, the commission has, from time to time, given the railways generous praise for their operation under the Transportation Act.

The law imposes other duties on the commission besides that of seeing that the railways obey it; and it is just as reprehensible for the commission to fail to perform its duties under the law as for the railways to do so. The Transportation Act most clearly and specifically makes it the duty of the commission, if the railways are efficiently, economically and honestly managed, to so initiate and adjust rates as to enable the roads of each large territorial group to earn a fair annual return. It provides that if any railway in any year earns more than 6 per cent on its valuation one-half of the excess return earned shall be recaptured by the commission. The commission in pursuance of the rate-making provisions fixed a tentative valuation for the railways of each large territorial group. It first held that they were entitled to earn 6 per cent and subsequently that they were entitled to earn 5¾ per cent. The provisions directing the commission, first, to let the railways of each group earn a "fair return" and, secondly, to recapture one-half of earnings over 6 per cent are in the same section of the law, and were plainly intended to be carried out as complementary parts of a consistent policy of rate regulation.

How has the commission actually administered the rate-making provisions? During the last four months of 1920, immediately after the commission had held that in the public interest the railways should be allowed to earn 6 per cent on their tentative valuation, they earned at the annual rate of 3 1/3 per cent. In 1921 they earned 3 1/3 per cent. After it had held that they were entitled to earn 5¾ per cent they earned 4 per cent in 1922; 5.2 per cent in 1923, and 5 per cent in 1924.

In view of the condition of general business the roads could not have expected to earn 6 per cent in 1921. They had a right to expect they would be allowed to earn a reasonable return in 1922, but in that year the commission made general reductions of rates. In both 1923 and 1924 railway business was normal, but in those years on the rates fixed by the commission the roads continued to fail to earn the return the commission had held would be reasonable, although they effected enormous economies. Business has continued to be normal in 1925, but the railways are still failing to earn the 5¾ per cent return.

It is reasonable to judge the commission's performance of its duty by the standard it has set for itself. Measured by that standard the commission stands condemned as having thus far failed to perform its duty in carrying out the rate-making provisions of the Act.

The commission is trying to collect a large amount of money from numerous railways under the recapture clause. In doing this it is only performing its duty. But because of the way it has administered and is still ad-

ministering the rate-making provisions the recapture clause is producing effects entirely different from those intended when it was enacted. Everybody familiar with the history of the Transportation Act knows that the recapture clause was adopted because previous to its enactment it had been considered impossible for the commission to make rates which would enable the railways as a whole to earn a fair average return without at the same time enabling some roads to earn more than was considered a fair return. It was the plain purpose of the rate-making provisions that the railways as a whole should be allowed to earn a fair average return, and that earnings should be recaptured from the more prosperous roads because this policy would enable them to make "excess" earnings. When the commission persistently fails to so initiate and adjust rates as to enable the railways as a whole to earn a fair average return and at the same time recaptures money from the more prosperous roads, it fails to perform its own duty under the law while compelling the more prosperous roads to perform a duty which it was intended they should perform only after the commission had done its duty. It does injustice to a great majority of the roads by failing to let them earn the return to which they are entitled, and does injustice to the stronger roads by taking from them money which it was intended should be taken only when the roads as a whole had earned that to which they were entitled.

The *Railway Age* was an advocate and has been a defender of the Transportation Act. It was an advocate and has been a defender of the recapture clause. It has been a believer in and defender of regulation by commission. This paper thinks, however, the time has come when every believer in the Transportation Act, in the recapture clause and in regulation by commission is justified in condemning the way the commission has, up to this time, administered the rate-making provisions and in demanding that it begin to perform its lawful duty as interpreted by itself. The plain fact is that up to the present time, except for its enforcement of the recapture clause, the commission has regulated rates under the Transportation Act virtually in the same way it regulated them before that law was enacted. Its rate-making provisions were plainly intended as a mandate to the commission to let the railways earn a larger average return than it let them earn before the war, but since they have been in effect the roads actually have earned a smaller average return than in any four consecutive years before the war.

It is especially necessary to emphasize these facts at the present time. The commission is directed by the Hoch-Smith resolution adopted at the last session of Congress to make an investigation to determine whether there should be a general readjustment of freight rates. The purpose of those who wrote this resolution was to try to bring about a reduction of rates on farm products. There is, in fact, however, no real conflict between the resolution and the rate-making provisions of the Transportation Act. Only by a false interpretation can the resolution be construed to direct any revision of rates that would prevent any group of roads from earning the fair return which the act says the commission shall let them earn; and the investigation under the Hoch-Smith resolution should include an inquiry as to why the railways have never yet earned the return the commission has held fair and necessary, and as to what steps should be taken to enable each group of roads to earn this return in future.

If the railways for four years had persistently failed to perform some duty imposed upon them by the Transportation Act, the commission, after investigation, would

condemn them for it in good round terms and thereby hold them up to public indignation. But who is to investigate and denounce the commission for having thus far persistently failed to perform its own duty under the same Act? The railways, acting in accordance with the spirit and declared purpose of the act, have borrowed billions of capital and invested it to enable them to render adequate service. The law contemplated that the commission should so regulate them as to help them to provide adequate service, but they do not owe their ability to borrow a dime of this capital to the way the commission has thus far administered the law, because if railway managers and investors had judged by what the commission has done up to this time railway managers would not have asked for this capital and investors would not have loaned it to them. The capital has been raised and invested in the expectation that sooner or later the commission would administer the law in accordance with its spirit and intent. If the commission should continue to administer it in future as it has in the past the law would become a complete failure and its purpose would be utterly defeated.

It is fair and pertinent to insist that the commission in future perform its own duty under the law as it very properly insists the railways should do their duty under it.

Is a Specification Intended to Be Enforced?

CROSS ties have long constituted the largest single item of railway expenditure for materials other than fuel. With the constantly declining areas of standing timber and the correspondingly increasing prices for ties, this proportion is growing from year to year. For this reason, the careful selection of this material to secure the maximum service per dollar of expenditure is of primary importance. Yet few materials used by the railways are bought so carelessly.

Take the question of the size of ties for example. The specifications of the American Railway Engineering Association under which most of the roads are now buying their ties fix the sizes of the various grades. They also specify the variations from these sizes which will be permitted. The only equipment which it is necessary for an inspector to possess to determine whether ties comply with the specifications as to size is a pocket rule. Yet an inspection of the ties which are being accepted in any of the more important producing areas will show that a large proportion of the ties are overgraded from one to two grades. Such a condition constitutes an indictment of those connected with tie purchases. The provisions of the specifications are so simple, as to leave no ground for the suspicion of ignorance and the overgrading is so widespread as to prove that it is not the result of the action of one man or one group of men. What then is the explanation?

It is a common expedient for the tie buyers of many roads to lower the grade when competition becomes active rather than to raise the price, thereby taking an unfair advantage over the road which enforces its specifications and misleading their own officers regarding the character of material which they are actually securing. However, the acceptance of a tie for a grade higher than that to which it is entitled, never increased the size of a single tie. Furthermore, it never will. Its only result is to increase the cost to the road by the difference between the prices paid for the two grades. In other words, while a road

may pay a No. 3 price for what may have been marked a No. 3 tie, both parties to the transaction know it to be a No. 2 tie. By condoning action of this character, a road participates in a transaction of as questionable standing as if it knowingly accepted an inferior product of any other kind as of standard quality. Such action is merely a subterfuge which leads nowhere except to demoralization and to irregularities in other channels.

In some areas the claim is made that the timber available will not produce specification ties and that strict enforcement will curtail production. However, it has been demonstrated repeatedly that when the lenient roads secure their requirements and withdraw from the market, these ties cease to come out and in their place specification ties are produced. In other words, the woodsmen bring out the kind of ties that they know will be accepted and no better.

The ability to secure specification ties rests with the railways. They can get them when they want them sufficiently badly to enforce the specifications and pay a fair price for them. They will not get them until they do. Overgrading, practiced or condoned because of fancied necessity, not only leads to irregularities among a road's own employees, but demoralizes the entire market for other roads. It has been said that the railways will not work together. The manner in which they compete with each other in the purchase of ties bears out this contention.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Political Ownership and the Electric Light and Power Industry. Compilation of material for information of member companies, quoting *Railway Age* and other railway sources, 262 p. Pub. by National Electric Light Asso., New York.

Public Ownership, by Carl D. Thompson. "The Public ownership of railroads," Chap. 3. 445 p. Pub. by T. Y. Crowell, New York. \$3.00.

Special Commodity Loading Statement for the Years 1924-1923-1922, by Car Service Division, American Railway Asso. 34 p. Pub. by American Railway Association, Washington, D. C.

Text of the 37th Annual Report on the Statistics of Railways in the United States for the Year Ended December 31, 1923, by U. S. Interstate Commerce Commission. Contains also some figures for 1924. 100 p. Pub. by Govt. Print. Off., Washington, D. C. 25 cents.

Periodical Articles

The Antofagasta-Bolivia Railway, by Stewart E. McMillin. Illustrated. Bulletin of the Pan American Union, May, 1925, p. 467-477.

The Cloud on the Railroad Horizon, by Julius Kruttschnitt. Annalist, Apr. 20, 1925, p. 547, 549.

Driving the First Tunnel Through the Continental Divide, by Robert G. Skerrett. Concluding article of series of 4 on Moffatt Tunnel. Compressed Air Magazine, May, 1925, p. 1237-1244.

History of the Chesapeake & Ohio, by W. J. Harahan. Illustrated. Shipper & Carrier, April, 1925, p. 4-7, 63.

The Railroad Situation Today, by Hale Holden. Its background and trends. Trade and Transportation Bulletin, April, 1925, p. 1-2.

New Books

Schlomann-Oldenbourg Illustrated Technical Dictionaries in English, French, German, Italian, Russian and Spanish. Published by Lewenz & Wilkinson, Ltd., 25, Victoria Street, Westminster, S. W. 1, London, England.

Eleven volumes, covering as many different technical fields, of this well-known series of dictionaries were published before the war. The war interrupted the work, but subsequent thereto four more volumes have been issued—covering hydraulics, pneumatics and refrigeration; building construction; raw materials of the textile industry; and spinning—its processes and products. These volumes will be followed shortly by one on weaving and woven materials and one on mining and later on by volumes on agricultural machinery, chemistry, gas engineering, etc. All the earlier volumes will be revised in the light of suggestions offered by many readers. An effort will be made to strengthen the English portion of the work through the newly established editorial and publication office in London.

Railways of Central America and the West Indies. By W. Rodney Long. 376 pages. 5¼ in. by 9 in. Bound in Paper. Prepared under the direction of the Bureau of Foreign and Domestic Commerce and published by the Government Printing Office, Washington. Price 70 cents.

This book gives exhaustive descriptive data on the railways of the localities mentioned in the title. Each country and each operating company is dealt with separately, with all details as to traffic, finance, character of equipment used, physical characteristics, etc., together with names and addresses of important officers. The book is No. 5 of the Trade Promotion Series issued by the Bureau of Foreign and Domestic Commerce and is intended primarily for the use of manufacturers of railway equipment and supplies who are interested in extending their markets in this field. It succeeds admirably in giving in detail practically all the information which anyone would need for this purpose.

Railway Transportation: Principles and Points of View. By Sidney L. Miller, Assistant Professor of Economics, University of Wisconsin. 905 pages. Size 6 in. by 9 in. Bound in cloth. Published by A. W. Shaw Company, Chicago.

One of the many things accomplished in the railway world in 1924 that should not escape attention is the valued contributions that were made to the literature of the subject of transportation. Possibly this resulted from the return of the railways to comparative prosperity, and an enlivened interest in railway affairs in the popular mind. We are far enough beyond the passage of the Transportation Act to be able to appraise that legislation, at least to some extent, and evaluate the results of railway operation under the new principles of regulation which it has established.

These thoughts are suggested in reviewing the latest of the volumes dealing in the larger way with the subject of the economics of transportation, namely, the new book entitled "Railway Transportation" by Professor Miller, which is properly classed as one of the several important railroad books of 1924. It is an exhaustive treatment of the subject in all its phases. It does not, of course, deal with the technicalities of railway operation in the engineering, maintenance of way and equipment, or the transportation departments. It is intended as a text book and does not attempt to bring to the subject of economics in general, or railway regulation in particular, new tenets of belief; nor does it attempt to approach the subject in any-

thing but what for brevity's sake we shall term the orthodox manner.

This does not mean that Professor Miller does not write with a purpose. He has such a purpose and it is a salutary one. He states it in these words: "For almost half a century, while the railway problem was developing, the public seemed ignorant of the possibility of conflict between its interests and those of private enterprise; when that conflict could be no longer ignored the public proceeded to deal with the 'railway problem' with greater energy than judgment or statesmanship. . . . The solution of our railway problem lies along the solid path of understanding."

It will not follow, he continues, from "vindictive action—restrictive and punitive regulation has already failed; neither will the magic wand of guild socialism or government ownership and operation clean away all obstacles. What the ultimate solution of the problem will be is uncertain—if, indeed, there be an ultimate solution—but this much is assured: except as there is a better understanding of the nature of the industry and the character of its problems, we will make slow progress in rectifying past errors of policy, and none toward the substitution of preventive for curative treatment. It is hoped that this book may contribute something toward that better understanding so essential to constructive action."

Professor Miller is favored by having an interesting and readable style. Unfortunately, however, his book is rather large. Its 900 pages offer a formidable bit of reading, as large books always do. It might have been better to have divided it into two volumes.

Professor Miller divides the treatment of his subject into four parts. These are preceded by an introduction in which he defines the significance of transportation and gives a description of its early history prior to the origin of railroads. Part I, entitled "The American Railway Net," is a history of railway development in America brought up to recent times by chapters on federal control, on present territorial groupings and on present ownership groupings. Part II is entitled "Railway Service" and deals with railway organization and railway freight, passenger and related services. Part III, "The Economics of Railway Enterprise," discusses such subjects as competition, combination, capitalization and security regulation and the theory and practice of rate making. Finally, Part IV deals with regulation, explaining its basis and beginnings, and carrying the subject on through regulation by state bodies and the courts. The last six chapters of Part IV deal with the development of federal regulation from the discussions which finally led to the Act of 1887, to the latest developments which are embodied in the provisions of the Transportation Act, and the results that have been secured therefrom. Each chapter is supplemented with a list of references for those who may desire to engage in further study of particular phases covered.

RAILROAD POLICE OFFICERS recovering stolen automobile tires are advised to look for the manufacturer's special shipping number on all such tires (stamped either on the wrapper or the tire itself) as a means of quick identification of the owner. This system of stamping, introduced as a result of conferences between the tire makers and a committee of the Protective Section, A. R. A., provides for the placing of a given number on each one of the tires loaded into a car (carload shipments); and a telegram to the shipper will be responded to at once with the name of the consignee of that car. The A. R. A. committee is taking measures to secure the general use of this marking scheme, and announces that the practice has been adopted already by the makers of Fiske, Firestone, Goodyear, Goodrich, Miller and Kelly-Springfield tires.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Competing with Automobiles

CHICAGO.

TO THE EDITOR:

I have noticed the article, "Passenger Business and the Automobile," published in your April 4 issue, page 869.

There is at least one railroad which is trying the plan suggested by your correspondent who signs himself "Merchant," as the Chicago, Milwaukee & St. Paul has recently published some weekend round-trip rates in Wisconsin which are on sale on Saturdays and Sundays and good for return passage up to Monday following date of sale on the basis of 110 per cent of the one-way rate. We also have on sale daily a round-trip ticket with a fifteen day return limit on the basis of one and one-third times the one-way fare.

We are hoping the above will do exactly what is outlined in the article mentioned.

R. M. CALKINS.

Chief Traffic Officer, Chicago, Milwaukee & St. Paul.

Joint Bureau of Research

W. OAKLAND, Cal.

TO THE EDITOR:

I have read with much interest the addresses of Frank H. Alfred and James C. Davis before the A.R.E.A. convention recently, as reported in your Daily issue of March 12, page 688.

Especially do I think notable Mr. Alfred's suggestion, quoted below, that a transportation research department be established. It should be brought more actively to the attention of every one in the railroad field:

"Surely the operations of a great railroad are of enough importance to justify a reasonable amount of experiment and research, and any of the larger systems could well afford to have a department for this purpose. However, on account of the general tendency to let the other fellow try it first, I am heartily in favor of establishing a joint bureau of research, supported by all the railroads of the country, and as the first major subject of experiment I would propose the development of a design for a permanent roadbed."

Aggressive transportation men often wonder why the internal combustion engine, with its theoretically four times as efficient fuel consumption as compared to the steam locomotive, has not been developed as fast in the railroad field of transportation as in the highway and shipping fields. The manufacturers' experiments along these lines are attracting much interest.

But how much more speedily and economically could these potential money savers be proved or disproved by the direct efforts of the railroads themselves. Mr. Alfred's suggested transportation research bureau could well devote its time initially, it seems to me, to this question of the internal combustion locomotive. But, in any event, systematic, practical research by the railroads jointly should prove very profitable.

F. E. YOAKUM,

Trainmaster, Southern Pacific.

Flagging Rule in Automatic Territory

CEDAR RAPIDS, IOWA.

TO THE EDITOR:

Referring to the editorial in the issue of March 28, 1925, "Is Flagging Required With Automatic Signals?" in which mention is made of a rule of the Northern Pacific which, in automatic block signal territory, relieves a flagman from going back to protect his train if an automatic block signal, at least one-half mile to the rear of the train, can be seen to display stop indication. The Rock Island Lines rules and regulations of the operating department, effective April 1, 1910, contained Rule 99-a which provided that when a train required protection within a block controlled by an automatic block signal, and such signal was not less than one-half mile to the rear of the train, the flagman need not go back beyond where the block signal could plainly be seen to display stop. This same rule is embodied in the present rules and regulations of the operating department which took effect January 1, 1921.

F. A. BOGUE,

Trainmaster, Rock Island Lines.

From a College Boy

BETHLEHEM, PA.

TO THE EDITOR:

I have read with much interest the various articles appearing in your magazine concerning the opportunities of college men on the railroads. It is very discouraging to one who has always been interested in railroads to learn that the opportunities for a college graduate in that field are so limited. At present I am a member of the junior class at Lehigh University pursuing civil engineering.

My student friends and myself who are interested in railroads do not believe that we should be especially favored after graduation when we engage in business or professional work, but we do wish that our knowledge and our broader training over the average man who has never had college training should be considered and that we should be given every opportunity to advance ourselves as far as possible.

We appreciate very much your attempts to move the railroads to consider and to make greater efforts to secure college men and to give them better opportunities than are offered to them at present.

JAMES H. LEVAN.

Meeting Automobile Competition

ST. PAUL, MINN.

TO THE EDITOR:

In the "Letters to the Editor," section of the *Railway Age* of April 4 "Merchant" of New York offers some suggestions on selling transportation to offset the loss of traffic due to the increasing use of motor cars.

Among the western lines the Great Northern has been a leader in doing this very thing. As an example, there is a week-end round trip fare of \$6.00—only sixty cents more than the one way fare—available in either direction between St. Paul-Minneapolis and Duluth-Superior. Tickets are on sale the afternoon of each Friday and all day Saturday and are good returning from outward destination until midnight of Sunday following date of sale.

Besides this, the Great Northern authorizes week-end round trip fares to summer tourist or lake resorts. These tickets have dates of sale and limits similar to the \$6.00 fare above mentioned.

For vacation or pleasure seekers who desire a longer limit slightly higher round trip fares are made and are available every day with a final return limit of October 31.

For long distance travelers to Glacier National Park, Rainier National Park and the cities of the North Pacific coast especially low round trip summer tourist fares are in effect daily beginning May 15 with a final limit of October 31.

All of these excursion fares are advertised by the use of placards, flyers, newspapers, magazines and in descriptive literature. The tickets are first class and are good for passage in parlor or sleeping cars upon payment of seat or berth fare as the case may be.

A. J. DICKINSON,

Passenger Traffic Manager, Great Northern Railway.

Why Cut Off the Locomotive?

ST. PAUL, MINN.

TO THE EDITOR:

Referring to the letter by Mr. Kepler Johnston, under the above caption, in the *Railway Age* of November 29, 1924, a partial answer is found in the following quotation from the December 12, 1924, minutes of the St. Louis Air Brake Club: "One member stated that his investigation resulted in finding many cases of wheels sliding following spot stops made for water or coal, without detaching the engine. This practice invites stuck brakes, brake burns and slid flat wheels on account of the difficulty of releasing the brakes after making such stops. He also reported that the number of wheels slid flat had been much reduced on his road by a strict observance of detaching engines from trains when taking fuel or water."

I have had considerable experience in aiding railways to reduce break-in-tuos and have participated in special campaigns where the first procedure was to make a thorough analysis of the causes. This work was followed up by riding with the enginemen who had experienced the most trouble and seeing that they were properly instructed. As a result, I am confident that the freight train rule to stop short and cut-off for spot stops, as for coal and water, is now more important for economical and expeditious movements than ever before. Inquiry made of those who are in even a better position to know and judge accurately, confirm this.

Observing some especially expert enginemen spot for water without cutting off, might convey the idea to one who has not made such stops that it is easy to do. Without going into details, I can give definite assurance that it is not easy to do and that the average engineman cannot be expected to make it a practice without causing considerable damage and delay.

It is especially important that the more expert enginemen observe this rule, first, because they do not know of all the damage they do and, second, so as not to set a bad example for the less expert.

F. B. FARMER.

THE IMPERIAL JAPANESE GOVERNMENT RAILWAYS will be represented at the International Railway Congress in London in June by the following: Tsuneo Ito (head of delegation), Manabu Kagayama, Chusaburo Nakayama, civil engineers; Iwao Koyama, Shinsaku Tokunaga, Genmatsu Kobayashi, mechanical engineers; Hajime Minami, electrical engineer, and Toyokichi Nakagawa, Yuzo Kobayashi, Minoru Maeda and Katsusaburo Ikeda, secretaries.

Lima Builds 2-8-4 Type Locomotive

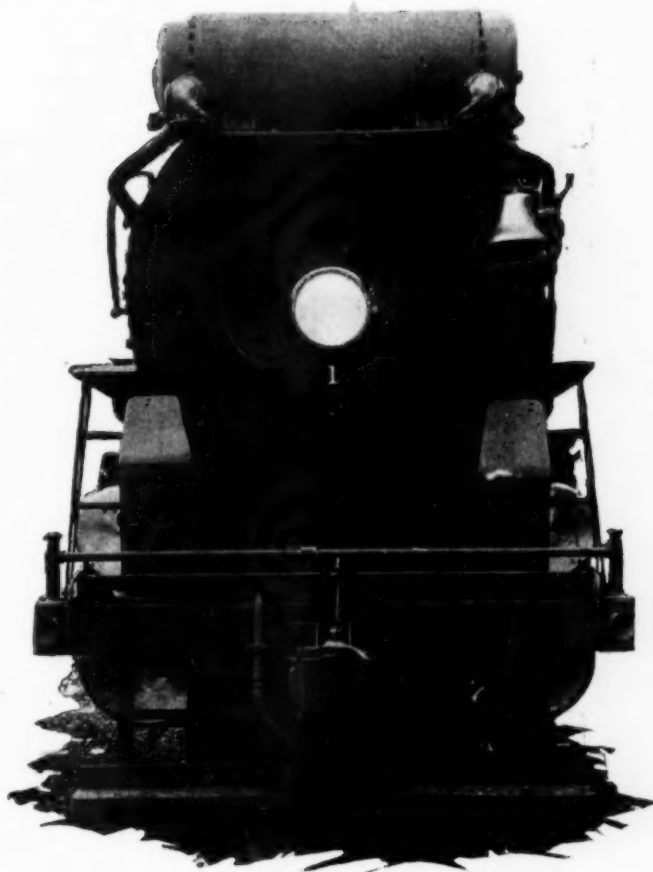
Large grate to reduce rate of combustion requires 4-wheel trailer truck—Tractive force with booster, 82,600 lb.

AN eight-coupled freight locomotive with 100 sq. ft. of grate area was built by the Lima Locomotive Works, Inc., and placed in service on the Boston & Albany in February. This locomotive, which is owned by the Lima Locomotive Works, weighs 385,000 lb., of which 248,200 lb. is on the drivers and 101,300 lb. on the four-wheel articulated trailing truck. It carries 240 lb. boiler pressure and, with a maximum cut-off of 60 per cent, develops a tractive force of 69,400 lb. Including the booster, which drives on the rear pair of trailing wheels, the total tractive force is 82,600 lb.

The Objectives of the Design

The principal objectives in the design of this locomotive were the development of high horsepower capacity and improved economy in the use of fuel. It may be considered a logical step forward in carrying out the principles on which this builder has been working since the inception of the design of Locomotive 8000 which was built for the Michigan Central in 1922, and of which design over 300 have since been built for various parts of the New York Central System. A comparison of the more important dimensions and proportions of the two locomotives will serve to indicate the methods by which it is expected to obtain increased horsepower and higher fuel economy. Such a comparison will be found in the table.

It will be seen that the cylinders are the same size on both locomotives. This suggests that an increase in trac-



COMPARISON OF LOCOMOTIVE A-1 AND LOCOMOTIVE 8000

	A-1	8,000
Type	2-8-4	2-8-2
Cylinders, diameter and stroke	28 by 30	28 by 30
Cut-off in full gear	60 per cent	Full stroke
Boiler pressure	240 lb.	210 lb.
Weights in working order:		
On drivers	248,200 lb.	248,000 lb.
On front truck	35,500 lb.	29,000 lb.
On trailing truck	101,300 lb.	58,000 lb.
Total engine	385,000 lb.	335,000 lb.
Diameter drivers	63 in.	63 in.
Heating surfaces:		
Firebox, incl. arch tubes	337 sq. ft.	291 sq. ft.
Tubes and flues	4,773 sq. ft.	4,287 sq. ft.
Total evaporative	5,110 sq. ft.	4,578 sq. ft.
Superheating	2,111 sq. ft.	1,780 sq. ft.
Comb. evaporative and superheating	7,221 sq. ft.	6,358 sq. ft.
Grate area	100 sq. ft.	66.4 sq. ft.
Net gas area through tubes and flues	1,536 sq. in.	1,348 sq. in.
Rated tractive force:		
Engine	69,400 lb.	66,700 lb.
Engine and booster	82,600 lb.	77,700 lb.
Factor of adhesion	3.58	3.72

tive force was not the primary objective, although some increase has been possible because of the smoother torque curve and the resulting lower factor of adhesion which the employment of limited cut-off made possible. The outstanding difference in proportions is in the size of the grate, the new 2-8-4 locomotive having approximately 50 per cent more grate area than did the earlier Mikado. It will also be noted that the boiler is somewhat larger in other respects. The total evaporative heating surface has been increased about 12 per cent and there is an 18 per cent increase in the amount of superheating surface, resulting in an increase of combined evaporative and superheating surface of about 13½ per cent. While these figures indicate a considerable increase in capacity for heat absorption, the greatest increase in boiler capacity will

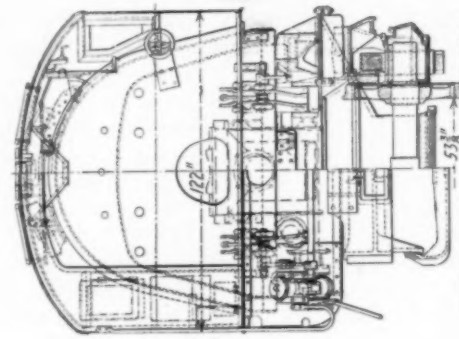
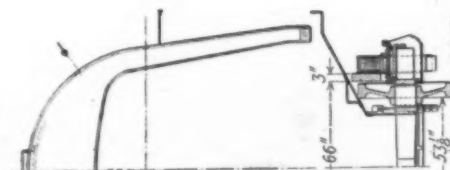
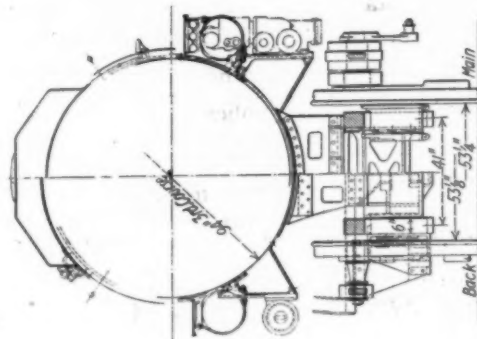
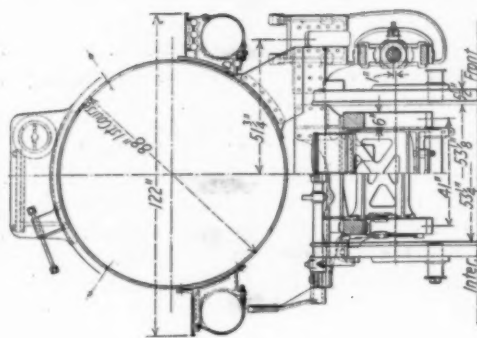
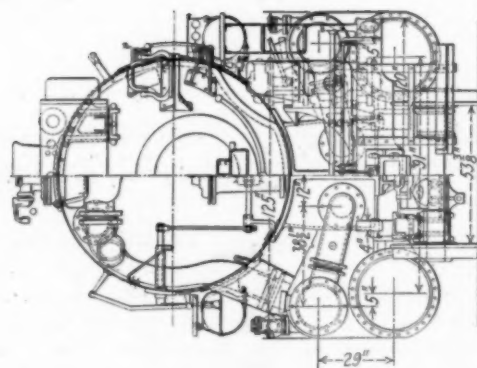
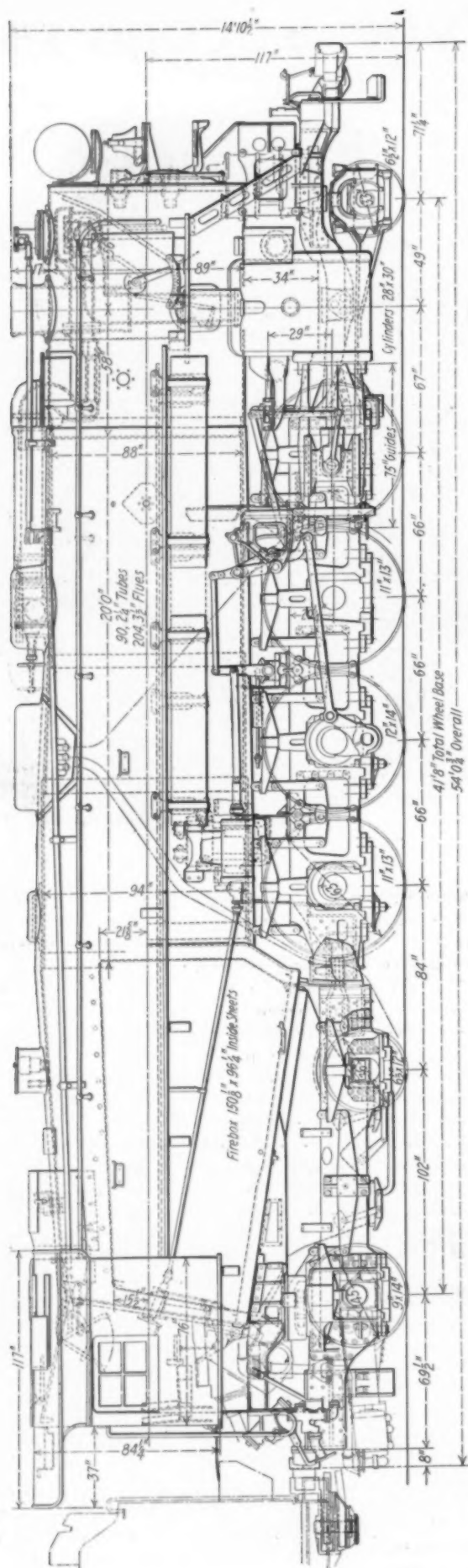
undoubtedly result from the ability to release at the grate a large aggregate amount of heat at exceptionally low rates of combustion. This favors both high boiler capacity and high fuel economy.

The other principal factor in this design for the improvement of fuel economy is the employment of the limited maximum cut-off which is accompanied by an increase in boiler pressure primarily to offset the reduction in the ratio of mean effective pressure to initial pressure resulting from the limited cut-off. While the value of the limited cut-off as an economy factor is more apparent within the speed range at which full-stroke cut-off locomotives are ordinarily operated, it has also been found that a significant reduction in water rate occurs throughout the entire speed range. For freight service, a very considerable percentage of the locomotive mileage is made in the speed range within which full-stroke locomotives operate at more than 60 per cent cut-off.

There is some tendency toward improved thermal efficiency because of the higher boiler pressure. Its principal effect, however, is to increase the tractive force over that of the full-stroke cut-off locomotive at speeds where less than 60 per cent cut-off is required. This means correspondingly increased horsepower at these speeds.

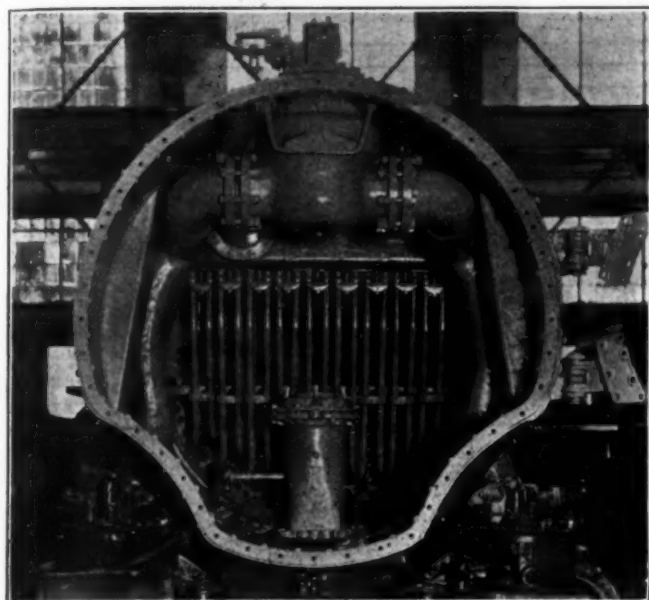
Aside from the proportions of the new locomotive, its construction embodies four important innovations in detail design.* These are the cast steel cylinders which have made possible a saving of 4,000 lb. in weight; the articulated four-wheel trailing truck which does not require rear frame extensions and has made possible a marked im-

* These details and other features and combinations embodied in this locomotive are covered by patents or patents pending.



Elevation and Cross Sections of Lima 2-8-4 Type Locomotive

provement in ash pan design; the articulated main rod which delivers its load on two outside crank pins instead of on one, and the simple port arrangement by which an unbalanced cut-off has been obtained in the two ends of



Interior of the Front End During Construction

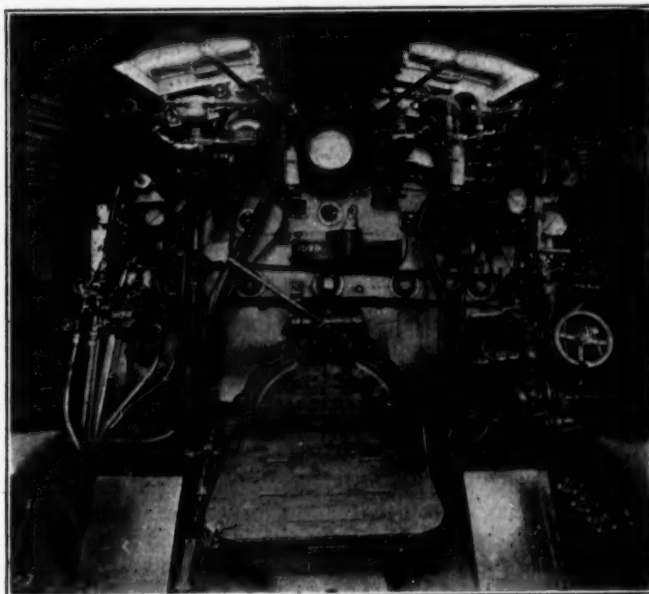
the cylinders at starting, with a resulting increase in the smoothness of the starting torque curve.

The Cylinders

This is not the first application of cast steel cylinders. It will be remembered that Locomotive 50000, built in 1911 by the American Locomotive Company, was equipped with cylinders of this material. The cylinders on Locomotive 50000 called for the use of outside steam pipe connections, but the exhaust passages from the valve chamber were cored inside the body of the casting. In the case of the cylinders on the new locomotive, there are no steam passage connections from the valve chamber to the saddle proper. The only steam passages in the saddle are from the front and back faces of each half-saddle inward

from the valve chambers to the saddle exhaust passage by means of cast pipes which are bolted to openings in the valve chamber extension heads at one end and against the face of the saddle casting at the other. This construction leaves the designer free to distribute his metal in the connections between the saddle and the cylinder and valve chamber with one objective in mind—the strength and quality of the casting.

Before the design of the new locomotive was laid down, a cylinder and half-saddle of this design was cast, machined and pressure tested. As a result of the experience

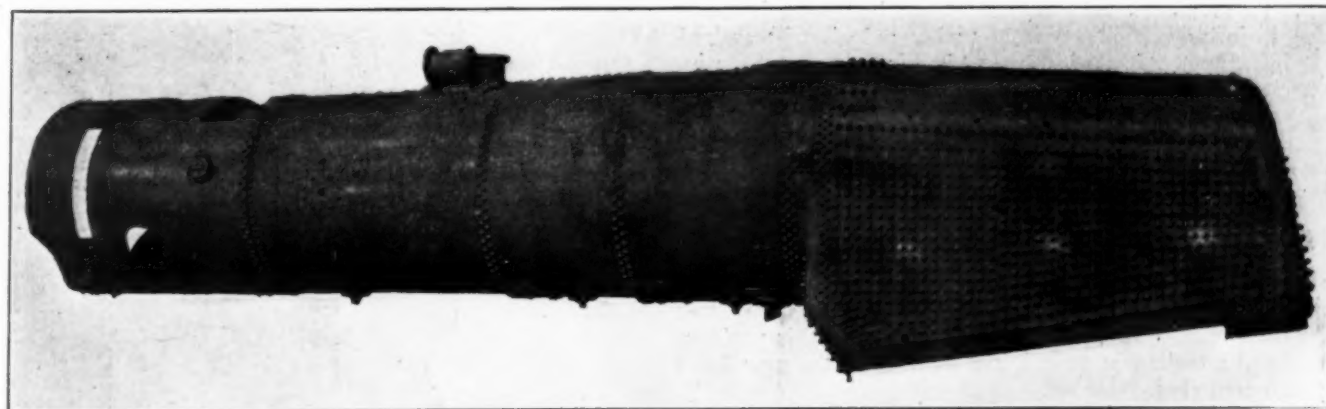


The Interior of the Cab

obtained from this casting, the cylinders for the new locomotive were cast with only comparatively minor changes in the pattern.

The Trailer Truck and Equalization System

The articulated four-wheel trailing truck is a unique development in the design of frame and the equalizer systems. This truck in effect forms a part of the main frame system, leaving no need for rear frame extensions back



The Boiler

and upward to the exhaust standpipe base. The cores for these passages are supported in the mold at each end, making the floating of the core very unlikely, and the walls of the passages are accessible should it be necessary to close a blow-hole by welding.

The photographs show clearly how connection is made

of the main frames. The main frames terminate just back of the rear pair of drivers. Between them is bolted a hinge casting of the Mallet type; a corresponding hinge casting forms the front member of the trailer truck. The buffing and pulling stresses are thus transmitted directly through the trailing truck frames, which are of heavy

sections, and the drawbar pocket forms a part of the rear trailer frame casting.

The vertical load is transmitted to the trailer truck at two points on each side: at the front corners of the trailer hinge casting, on the top surface of which rest extensions of the main frames, and at the rear corners of the firebox, each of which is supported on a combined expansion and self-centering lateral motion bearing. It will thus be seen that while the trailer truck is free to swing laterally about its hinge joint, its vertical alinement remains unchanged with respect to the main frames, of which, in effect, it forms a part.

The two journal boxes on each side of the trailer are equalized together, each side thus forming one point of the three-point spring suspension. The entire driving wheel base on each side of the locomotive is equalized together and the two sides are cross-equalized with the leading truck, so that the leading truck and the entire driving wheel base form the third point of the spring suspension.

One of the influences of this truck on the design of the locomotive, which although incidental is none the less important, will be seen in the ash pan. The elimination of the rear frame extensions has removed one of the worst restrictions on securing a satisfactory slope of the ash pan side sheets and the space between the trailer axles has permitted the building of hoppers of unusually large capacity. Although the grate is unusually large, the ash pan provides but little less than one cubic foot of capacity per square foot of grate.

The ash pan, instead of being attached directly to the mud ring, is built into the trailer truck and when the trailer truck is removed from the locomotive the ash pan is removed with it. The width of the flare required to keep the ash pan under the firebox when the trailer is displaced laterally on curves also provides an unrestricted air opening between the ash pan and the mud ring on all four sides.

In the absence of rear frame extensions, from which the cab and a number of items of auxiliary equipment are supported, heavy cast steel cab brackets are attached to the back corners of the mud ring. Heavy lugs are cast below the back and sides of the mud ring at the corners to support these brackets, which also form the top members of the combined furnace bearers and trailer truck lateral motion bearings.

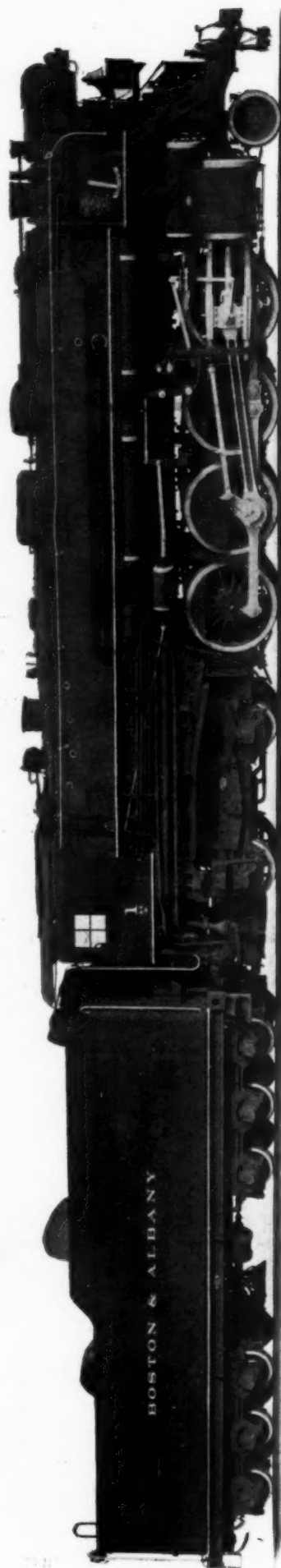
As has already been indicated, the booster drives on the rear trailer axle. This axle has 9-in. by 12-in. journals and 45-in. wheels. The front trailer axle is of standard M.C.B. type, with 6-in. by 12-in. journals and 36-in. wheels. The booster frame and cylinders are located back of the rear trailer axle and are suspended from the trailer frames by a cast steel yoke. The arrangement is clearly shown on the elevation drawing.

The Driving Rods

One of the greatest problems in connection with the use of the limited cut-off is to provide for the increase in the main crank pin and driving box loads which results from the high initial piston load. The solution of this problem has been attacked in an original manner in the new 2-8-4 type locomotive.

The main rod is built in two parts, one of which drives directly on the main crank pin, while the other carries back part of the load to the rear crank pin, thus relieving the main crank pin of one-quarter of the full driving load. This rod arrangement is shown in one of the photographs.

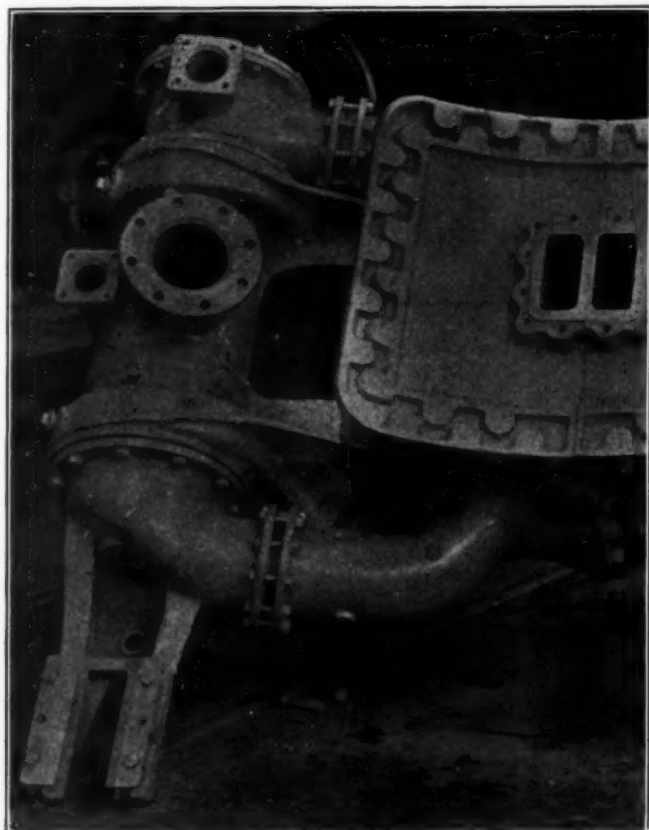
The back end of the main rod proper is forked to receive the parallel section of the main rod. With the two parts of the rod thus assembled, a heavy steel bushing is pressed into the forked end of the main rod proper, hold-



A Departure from Customary Locomotive Proportions—A Grate Area of 100 sq. ft. Reduces the Rate and Improves the Efficiency of Combustion; A Maximum Cut-off of 60 Per Cent Improves Steam Economy and Increases Horsepower Output at Medium and High Speeds

ing in place and providing a bearing for the parallel section of the rod. This bushing transmits directly from one section of the rod to the other, the portion of the load which is carried back to the rear wheel. Inside of the steel bushing is a floating bronze bushing which serves as a crank pin bearing. The usual side rod arrangement distributes the driving load forward from the main crank pin to the second and first crank pins. This arrangement, by relieving the main pin and reducing the size of the middle connection bearing made possible the same spread of cylinders, with 240 lb. boiler pressure as was formerly used with 200 lb. boiler pressure.

By the use of the floating bushing on the main pin, which may be pulled and replaced without removing the rod from the pin, it is expected that no difficulty will be encountered in roundhouse maintenance because of the



The Cast Steel Cylinder, Showing the Outside Exhaust Pipe Connections

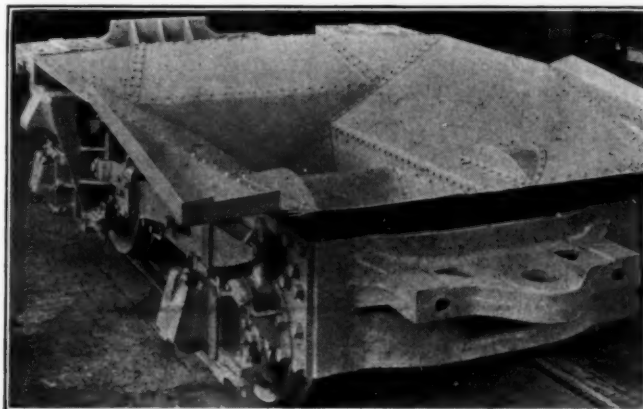
weight and size of this main rod and that, indeed, the amount of work may actually be reduced.

Here again, as in the case of the cast steel cylinders, this rod arrangement was subjected to a service test of considerable duration on a 4-8-2 type locomotive before the design of the new locomotive was laid down. The experience thus obtained indicates that it is thoroughly practicable.

Unbalanced Cut-off

In addition to the auxiliary starting port which is regularly incorporated in the valve chamber bushings of limited maximum cut-off locomotives, the cut-off at the front end of the cylinder is increased slightly over that at the rear end at starting and very slow speeds, by lengthening two of the ports in the front valve chamber bushing. The ports are $2\frac{3}{16}$ in. wide and in the front bushing two of the top ports are increased $\frac{7}{16}$ in. in width toward the center of the valve chamber.

This simple expedient effectively increases the period of steam admission at slow speeds, but as the speed increases the amount of steam admitted through the extension of the two ports gradually decreases until it becomes negligible in its effect on the cylinder events. For a nominal 60 per cent cut-off, the ports and valves are propor-

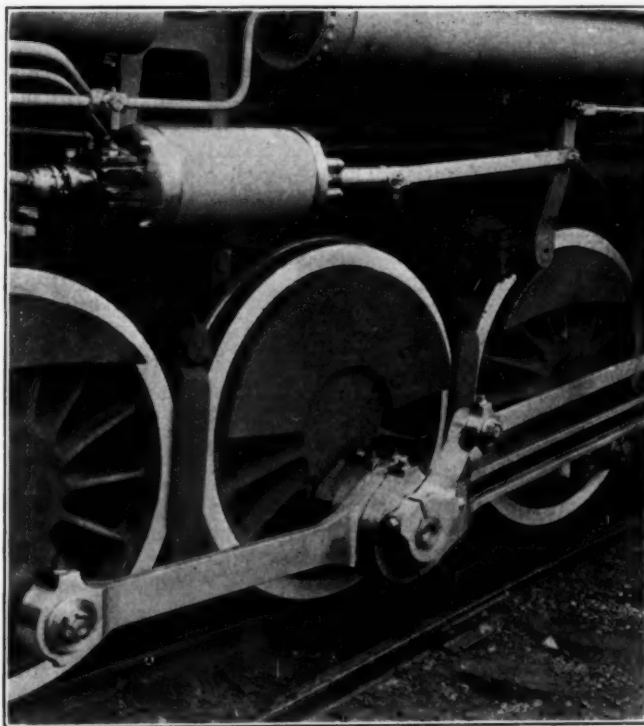


The Front End of the Trailer Truck, Showing the Ash Pan in Place

tioned to give an actual cut-off of about 60 per cent in the rear end of the cylinder and 63 per cent in the front end.

Boiler Equipment

Aside from the size of the firebox, the boiler does not differ materially from the usual type of design. It is



The Articulated Main Rod

slightly larger in diameter and contains a somewhat different tube sheet layout with more heating surface than that of Locomotive 8000. The points of most interest are shown in the illustrations. It will be seen that steam is taken from the dome through an outside dry pipe to the Type E superheater header at the rear of the smokebox.

The throttle is located in the smokebox just ahead of

the smoke stack. The single steam connection from the superheater header to the throttle is cast integral with the throttle casing. Branch pipe connections are provided on either side of the throttle casing from which the branch pipes lead down inside the front end, passing outside at points just above the cylinders.

Above the superheater header, an opening in the top of the smokebox permits access to the superheater unit bolts which are placed with the nuts at the top. Unit joints may thus be tightened without entering the front end.

There are two turrets from which steam is distributed to the auxiliaries, both located over the top of the boiler just in front of the cab. One of these furnishes saturated steam to the injectors and lubricators. The other draws superheated steam from the throttle pipe connection to the superheater header for use in the air pumps, the feed water pump, the blower, grate shakers, stoker and headlight generator. The whistle, which also uses superheated steam, has its connection welded directly on the steam pipe which feeds the turret. Steam for the booster is taken from the left branch pipe and its exhaust is carried up outside of the smokebox, opening to the atmosphere just in front of the smokebox.

It will be seen from the photographs that two channels of rectangular section are let into the sides of the smokebox. These are provided to take the exhaust steam pipes leading to the feed water heater, which is mounted on brackets in front of the front end, without projecting outside the surface of the smokebox shell. Recesses are also formed in the lower quarters of the front end door ring and in the sheets immediately back of it, to clear the tops of the air compressors, one of which is mounted on a bracket on each side of the front deck casting.

Cab Arrangement

In arranging the control valves and equipment located in the cab, considerable attention has been given to providing for the convenience and comfort of the engine crew. As far as possible all gages have been brought together in one location where the engineman can see them at a glance. A pneumatic whistle valve has been placed on the side of the cab where the engineman does not have to reach to operate it. The various valve handles have been grouped and labeled, with those most frequently operated placed where they are most readily accessible.

Folding spring cushioned seats, the frames of which are supported on coil springs, are provided on both sides of the cab. Back of the fireman's seat is a locker for clothing.

Service Trials

In designing the locomotive considerable latitude was provided for the selection of the final working boiler pressure and maximum cut-off. This was done in order that the maximum cut-off might finally be determined as the result of trials in actual road service. To this end the locomotive was equipped with a variable exhaust nozzle, the design employed by the Paris, Lyons & Mediterranean having been selected as meeting the requirements of a thoroughly tested and practical device. This nozzle is not intended for manual control by the engineman, but its operating arm is secured to a graduated quadrant on the outside of the front end which permitted adjustments in exhaust nozzle area to be made as frequently as might be desired during the adjustment process without the necessity of entering the front end.

In developing the design of this locomotive, the builders set up the following requirements: That it must be able to handle the same train in drag freight service with 20 per cent less coal than is burned by the Locomotive 8000 design; that, in high speed freight service, it must pull

the same train at the same speed as Locomotive 8000, with 12 per cent less coal, or deliver 10 per cent more drawbar pull for the same amount of coal. Experience with the locomotive so far indicates that it will fully meet and probably exceed these requirements. The locomotive is now undergoing tests in service, from which complete data will later be available.

The principal dimensions and data are shown in the following table:

Type of locomotive	2-8-2
Service	Freight
Cylinders, diameter and stroke	28 in. by 30 in.
Valves, piston type, size	14 in.
Maximum travel	8¾ in.
Outside lap	2½ in.
Exhaust clearance	⅞ in.
Lead in full gear	¼ in.
Cut-off in full gear, per cent	60
Weights in working order:	
On drivers	248,200 lb.
On front truck	35,500 lb.
On trailing truck	101,300 lb.
Total engine	385,000 lb.
Tender	275,000 lb.
Wheel bases:	
Driving	16 ft. 6 in.
Rigid	16 ft. 6 in.
Total engine	41 ft. 8 in.
Total engine and tender	82 ft. 6 in.
Wheel bases:	
Driving	16 ft. 6 in.
Rigid	16 ft. 6 in.
Total engine	41 ft. 8 in.
Total engine and tender	82 ft. 6 in.
Wheels, diameter outside tires:	
Driving	63 in.
Front truck	33 in.
Trailing truck	36 in. and 45 in.
Journals, diameter and length:	
Driving, main	12 in. by 14 in.
Driving, others	11 in. by 13 in.
Front truck	6½ in. by 12 in.
Trailing truck	6½ in. by 12 in. and 9 in. by 14 in.
Boiler:	
Type	Straight top
Steam pressure	240 lb.
Fuel, kind	Bituminous
Diameter, first ring, outside	88 in.
Firebox, length and width	150¾ in. by 96¼ in.
Height mud ring to crown sheet, back	60½ in.
Height mud ring to crown sheet, front	91¼ in.
Arch tubes, number and diameter	5, 3½ in.
Combustion chamber, length	None
Tubes, number and diameter	90, 2¼ in.
Flues, number and diameter	204, 3½ in.
Length over tube sheets	20 ft.
Tube spacing	¾ in.
Flue spacing	¾ in.
Net gas area through tubes and flues	1,536 sq. in.
Grate area	100 sq. ft.
Heating surfaces:	
Firebox, incl. arch tubes	337 sq. ft.
Tubes	1,055 sq. ft.
Flues	3,718 sq. ft.
Total evaporative	5,110 sq. ft.
Superheating	2,111 sq. ft.
Comb. evaporative and superheating	7,221 sq. ft.
Tender:	
Style	Rectangular
Water capacity	15,000 gal.
Fuel capacity	18 tons
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent. ..	64.2
Weight on drivers ÷ tractive force	3.58
Total weight engine ÷ comb. heat. surface	53.3
Boiler proportions:	
Tractive force ÷ comb. heat. surface	9.61
Tractive force × dia. drivers ÷ comb. heat. surface ..	605
Firebox heat. surface ÷ grate area	3.37
Firebox heat. surface, per cent of evap. heat. surface ..	6.60
Superheat. surface, per cent of evap. heat. surface ..	41.4
Tube length ÷ inside diameter	74.5
Comb. heat. surface ÷ grate area	72.2

Can Railroads Use the Universities?*

Technical research and training of engineers mildly appreciated—Great potential value in field of administration

By Dr. Winthrop M. Daniels

Thomas De Witt Cuyler Professor of Transportation, Yale University

FROM one standpoint I almost hesitate to make any suggestions as to what universities can contribute to the problem of transportation. Since 1920, the roads have staged such a comprehensive "comeback" in the prompt and adequate handling of a heavy volume of traffic, surmounting congestion and overcoming car shortage, that it might seem almost idle to question their capacity to meet and solve all their problems without having outside advice thrust upon them. A recent magazine article tells about an Oriental who had attended an American college, and upon his return to the Orient was asked by his fellows what an American college was like. He explained off-hand that it was a big, highly organized, athletic club with provision on the side for study for those who were physically unfit. You may perhaps entertain a similar idea of the science of transportation, a big practical method for moving things, with a chance intrusion of academic advice by those otherwise unfit.

Railroading Not Popular With College Men

At the risk, however, of your adverse verdict, I venture as my first proposition that:

Railroad service, as a career, has declined in the appeal it makes to the pick of the oncoming generation.

I am not identifying the college men with the pick of the oncoming generation, though it is but fair to say that they constitute at least a due proportion of it. But if a cross section were taken a generation ago and today of the annual recruits to the army of industry, I am strongly of opinion that the percentage of the forceful and ambitious youngsters who enter railroading today is far less than it was thirty years ago.

My colleague, Professor Cunningham of Harvard, says:

With respect to the attitude of college men toward railroading as a life work and the attitude of railroad officers toward recruiting college men, there are elements of discouragement from the point of view of the teacher of transportation. Relatively few college men elect transportation as a vocation. They find a greater financial reward and more play for initiative in other forms of business. Many of the college men who go into railroading become discouraged and leave it for other fields. The railroad managements do not appear to realize that they are not attracting and holding the type of young man who is mentally equipped to qualify after practical experience for the increasingly difficult tasks of railroad management.

A teacher in a prominent mid-western university said recently, "I never advise my students to go into railroading. I should not like to look them in the face 10 years afterwards, if I gave them that advice."

Mention was made only recently in the *Railway Age* of the fact that, unlike numerous other industries, railroads do not engage in a regular canvass for the most promising men in college who are soon to enter on industrial pursuits. Of course, the fact should not be overlooked that some of these industries are in a developmental and expanding stage which railroads have outgrown; but the question still persists whether anything

like a discriminative selection is made of the new men taken on, and whether the system now in vogue is calculated to develop out of those now in the service a reservoir of competent higher officials for the future.

Experience Necessary—But It Is

Not the Only Road to Knowledge

At this juncture we are always sure to meet Mr. Worldly Wiseman who is convinced that the only school for future railroad managers is that of experience, the school of hard work and the university of hard knocks—particularly the latter—and who is openly skeptical or covertly opposed to any change in the régime he knew and under which he emerged into leadership. Now it is impossible to enter too positive a disclaimer to the idea that any form of business can be learned without long, practical and patient experience. But it is just as confidently asserted that haphazard selection of men who learn by long routine only the ritual of a particular job, and whose employment debars them from ever envisaging the complex interrelationship of the various departments of a railroad, is not the plan best adopted to obtain the most efficient management for the future.

The sole reliance on haphazard empirical methods has long been abandoned by the more progressive industries whose research laboratories and personnel departments show the value they attach to an admixture of theoretical training.

The exclusive empirical view of training of men for competent managers is belied by our nation-long experience in the matter of national defence. If we had no West Point or Annapolis, and merely promoted from the ranks of voluntary enlistment those whose long and meritorious service seemed to entitle them to the rank of officers, we should, in my opinion, have a vastly inferior organization to what we at present rely on.

Railroad Courses Should Be

Preceded by Academic Courses

Before suggesting certain ways in which universities and technical schools may helpfully contribute to transportation, I want first of all to say that little or nothing is likely to be gained by the attempt to vocationalize the years of undergraduate study, at least the first three years of the course. The idea of a college of liberal arts excludes the idea of its being a vocational training school. Its aim is to afford just the opposite—a liberal course of study in various fields other than those of immediate practical utility. In the technical and scientific schools I understand that the consensus of the best opinion is that the years allotted to the course are none too long to impart a knowledge of the basic scientific disciplines—mathematics, physics, chemistry, electricity and their more general applications to fundamental engineering.

Value of Engineering Training Admitted

It is primarily in the field of advanced, graduate or professional study and investigation—or perhaps in highly

*Abstract of an address delivered before the New York Railroad Club on April 17.

specialized vocational courses which presuppose considerable previous training—where lies the real plane of useful contact between the railroad and the university or technical school.

There can, I assume, be no question that in the higher range of technical engineering, the university and the technical school afford indispensable assistance in the field of transportation. Take the current experimentation in the testing of air brake systems on the train rack at Purdue University. While not intimately advised as to the project, it is my understanding that the A. R. A. determined that scientific experimentation along that line could nowhere else so advantageously be prosecuted. Of a similar character is the investigation at the University of Illinois in the stresses in railroad track in co-operation with the American Society of Civil Engineers and the American Railway Engineers Association.

Value of University Work in Administrative Problems Not Adequately Recognized

It is on the administrative side of transportation, however, where the opportunities for affording the future officer a well-rounded equipment are most meagre; and it is here where the opportunity of universities and technical schools to lend assistance might well be greatest. Between the mechanical and operating side of transportation and the traffic side, there is no natural bridge. Experience and competence, even though based on long and careful training in the manufacture of train-miles and ton-miles, give no assurance of similar efficiency in the sales end of the business which is what the traffic department amounts to. The schools can afford advanced economic instruction which ought to be of essential assistance in the field of transportation along at least three different lines:

- a. Statistical and accounting analysis as an instrument of financial control.
- b. The study of regulation and valuation as a guide and safeguard of railroad policy.
- c. The co-ordination of instrumentalities of transport; between different departments of the same carrier; between different carriers of the same type; and between different carriers of different types.

I shall explain and illustrate briefly what I include under each of these heads.

What the University Can Do for Statistics and Accounting

The art of statistical analysis of operating and financial data is one that is capable of immense advantage and one which is neither widely understood nor utilized by many railroad managements. Of all regulatory requirements those which impose on carriers the collection and reporting of operative data seems to me to merit little of the denunciation that has been showered upon them. The truth is that an up-to-date carrier for its own guidance ought—and many of them do—extend their statistical inquiries fully as far as the commission requires. If the requirement is burdensome, it is burdensome to those who incur the cost of amassing the figures and lack the insight to profit by their meaning.

A good illustration of the possibilities of financial control through statistics is found in the recent paper of J. E. Slater of the New Haven on the project of a transportation budget. It appeared recently in the *Railway Age*. A maintenance budget is an old story; and the cost of conducting transportation will naturally vary with the more or less unpredictable volume of traffic handled. But the establishment of criteria whereby to measure economy or its absence over the several divisions of a railroad when the traffic volume varies from normal is

only one of a thousand applications of the statistical instrument.

Too many companies have regarded the use of this quantitative instrument of control as something to be employed on the rare occasions of a rate proceeding or a divisions case where a cost study, often devised by some outside expert, is employed as a useful or persuasive exhibit.

Another highly important use of statistical analysis is to test rates or rate structures. The day of the empirical rate-maker ought to be nearing its end. You have heard the story of the man's advice to his boy. "My son, get money; honestly if you can, but—get money." Something like this has been the rule followed by the agent who made rates. He seemingly heard a paternal voice saying, "My son, get traffic; profitably if you can, but get traffic." The result too often has been that particular traffic, if not carried at an actual out-of-pocket loss, has afforded so slender a margin thereover as necessarily to discriminate against other varieties of freight. You can judge better than I how far matters of this kind are decided in practice by some slovenly rule of thumb, or by a method that will stand up under the acid test. While it is universally recognized how great a part of the cost of carriage is incurred for terminal costs, how few, relatively speaking, are the well-sifted analyses of this factor? A business of the magnitude of railroading cannot be discriminately comprehended by the more direct processes of visual inspection. The equipment of competent management must include something of a mastery of the meaning of statistical analysis.

What has been said of railway statistics is true in large measure of railway accounting. . . . All I venture here to suggest is that while the analysis and interpretation of prescribed accounts is an appropriate field for university instruction, it should never be forgotten that the presuppositions on which they are based ought to be sounded, verified and, if necessary, corrected.

University Necessary for Teaching

Wise Policy Under Regulation

I have suggested that the study of regulation may well afford a guide and a safeguard to railroad policy. I shall confine myself to a consideration of the matter of valuation only. If the railroads' duties are sharply defined and enforced by the public policy of regulation, their rights are no less clearly outlined in the constitution and the laws. In my judgment the roads are in danger of making two mistakes. The first is relying too exclusively on legal precedents rather than on economic principles in making their valuation case. The second is their acquiescence in a temporizing policy, and contenting themselves with that particular aspect of valuation which seems to work in their particular interest rather than in pursuing a common policy which in the long run will make for their collective benefit. The issue is sharply drawn between the theory of so-called prudent investment and the theory of fair value based on present day price conditions; between the straight line theory of theoretical accrued depreciation and a more rational treatment of the lessening in value to be ascribed to age, use, inadequacy and obsolescence; between mere acreage value and land value assignable to special adaptability for transportation uses; between the assertion and proof of going value and its virtual denial; between appreciation of roadbed and its total omission; between an incongruous jointure of values taken ten years apart and a uniform appraisal as of today. To lapse into acquiescence because a tentative valuation approximates a carrier's book cost, or—still worse—to adopt a defeatist attitude to avoid passing unpopularity is the road to eventual surrender.

Where the valuation staff of a railroad can obtain a grasp of the fundamentals of the carriers' legitimate position, if not in the university or technical school, it is difficult to say.

Instruction in Viewpoint Involving the Whole Industry—Not Just One Department

Last of all comes the question of a co-ordinated view of the instruments of transport in their mutual relationships. The student course in railroading once in vogue upon the Southern Pacific sought to afford just such a co-ordinated view of the various departments of that system. The preliminary two-year course prescribed the time to be spent in station service, in maintenance, in operation, in traffic and in accounting. In addition to prescribing the specific topics of inquiry and study in each position occupied in turn, an assignment of manuals of texts covering each job was definitely made. Eventually a salaried instructor was appointed to examine the men periodically and to gauge the competence they respectively evinced. It has occurred to me that a possible improvement could be made upon the plan of individual study and isolated examination. It would involve the occasional assembly of the special apprentices for a short interval of intensive study. With the background of a common recent experience, and under competent guidance, and under the stimulus of mutual interchange of ideas and impressions, the gains ought to be consolidated and organized before they are again despatched to learn the elements of a new aspect of the field. When the preliminary round of assignments had been completed by the apprentices, they would be better qualified to review the interrelation between parts of the system and to learn something of the requisite co-ordination so essential to the success of the whole. This intermittent, in-and-out course in the great practical transportation laboratory is a feasible means for enlisting the universities and the technical schools in serviceable work bearing on transportation. It will not be complete, however, until it is crowned with some system which will afford an even broader view of the correlation between the different means and avenues of transport, the railroad, the steamship, the electric carriers, the motor bus and truck, and even the airplane, the last arrival among the world's carriers.

What the War College or annual maneuvers are designed to accomplish among the various arms and services ought somehow to be realized among the various instrumentalities that serve the wider field of peaceful industry and commerce.

Nickel Plate Hearing

WASHINGTON, D. C.

THE hearing before Commissioner Meyer and Director Mahaffie of the Bureau of Finance of the Interstate Commerce Commission on the application for authority for the unified control and operation of the New York, Chicago & St. Louis; Chesapeake & Ohio; Hocking Valley; Erie, and Pere Marquette was resumed on April 23 and after three days of continued cross-examination of T. C. Powell, vice-president of the Erie, and J. J. Bernet, president of the Nickel Plate, by representatives of protesting minority stockholders, the hearing was again adjourned until May 6. While there has been much speculation and even prediction in the daily press as to the decision of the commission after the evidence shall have been heard and members of the commission shall have had an opportunity to consider it,

comparatively little progress has been thus far in the hearing. Two groups of minority stockholders of the Chesapeake & Ohio, and minority stockholders of the Hocking Valley and of the Nickel Plate are represented by counsel, all of whom cross-examined Mr. Bernet at great length and with much repetition regarding details of the exchange of securities and the terms of the leases. Much of the questioning consisted of efforts to get Mr. Bernet to assent to the lawyers' characterizations of details of the various transactions, as to which there was usually little disagreement as to facts, but Commissioner Meyer did not appear disposed to limit the cross-examination in spite of repeated protests by W. A. Colston, counsel for the Nickel Plate.

Many of the questions had to do with the reasons why the stockholders of the present Nickel Plate company are not to exchange their stock for that of the new company, which is to go to the old company itself in proportion to its outstanding stock, and as to why the Chesapeake & Ohio is not given a separate allowance, in the exchange of securities, for the 80 per cent of the stock of the Hocking Valley which it owns but which is pledged under its mortgage. H. S. Bird, counsel for one group of C. & O. stockholders, asserted that the old Nickel Plate company will hold \$23,000,000 of treasury stocks of the other companies whose properties are to be leased to the new Nickel Plate, which he said would be equivalent to \$75 a share for the Nickel Plate stockholders.

Commissioner Meyer at one point said the commission would undoubtedly like to know how the ratios of exchange of stock were arrived at. Mr. Bernet said that he had considered what the new company ought to be able to produce in the way of revenue and the general operating results of each company in the light of their expected contribution to the results under unified operation. Later Mr. Colston said he intended putting on a witness who would testify as to the facts, accounts and statistics but he objected to the kind of cross-examination which had been made of Mr. Bernet on such points, as to which he had not testified. H. W. Anderson, representing C. & O. minority stockholders, then said he would ask the commission to require the applicant to produce witnesses to testify not only as to the accounts but as to how the distribution of stock had been decided upon; that the men who actually worked it out should be required to tell how and why they had done what they had done. Mr. Colston replied that they had used a flexible judgment in application to the facts rather than exact formulas and he did not know whether he could produce a man to say just what figures he had used, but that he was willing to produce any facts which will enable the commission to determine whether the result is a fair one. Commissioner Meyer then said the commission will want to know how the ratios were fixed, what were the capitalizable assets of each company and how it was decided what stock should have voting power. It would want not only the basic facts on which men had exercised their judgment but also some one to say how he had arrived at his judgment on the facts. He said he was of the impression that Mr. Bernet was not the man who fixed the ratios but that the commission is entitled to an explanation. Mr. Colston said that the ratios were not fixed by the committee of which Mr. Bernet was a member but that they had been offered by the Van Sweringen brothers in a proposal which had been approved by the committee. All this was taken as leading up to the probability that O. P. Van Sweringen would later be called upon to testify, but no announcement was made as to what witnesses were to be called and the counsel for the protestants insisted on trying to get Mr. Bernet to give the replies they desired.

Mr. Anderson asked the commission to issue subpoenas for two men connected with New York brokerage firms who were recorded as large holders of Chesapeake & Ohio stock but Mr. Colston agreed to try to produce them when desired.

Other questions were intended to show that in the case of the Chesapeake & Ohio and Hocking Valley the Van Sweringen plan was approved by directors representing the Van Sweringen interests with little necessity for consulting the minority interests, and Mr. Bird asked if a high price had not been paid for the Huntington stock in the C. & O., in consideration of an agreement for four Huntington directors to retire from the board, reducing its membership from 15 to 11 so that the seven elected by the Van Sweringen interests would then have control.

In connection with questions as to what valuation figures had been consulted Commissioner Meyer said that only the underlying reports of the commission's valuation of the Chesapeake & Ohio had been available but that the commission's tentative valuation of the road would probably be available before the proceeding is concluded.

Questions as to the effect of the proposed unification on the short line railroads in the territory were brought forward when Mr. Bernet was questioned by Moultrie Hitt, representing the New York & Pennsylvania Railroad, a line of 56 miles connecting with the Erie at Canisteo, N. Y., and a committee of citizens that have been supporting the road. Mr. Hitt said it was desired that the commission, in approving the proposed merger, should impose a condition that this road should be taken over. After reading a number of statements to indicate the purpose of Congress to take care of the "weak lines" in enacting the consolidation provisions of the transportation act, he asked Mr. Bernet if the applicant had intended to conform to the theory of Congress in making its application and whether he recognized any duty to the short lines. Mr. Bernet started to explain his ideas as to short lines, saying that some probably should not be perpetuated but that others should be considered when Commissioner Meyer asked if he would not discuss how this particular short line should be taken care of, on the assumption that it is one that should be continued. Mr. Bernet said that he had never heard of it until he heard that it had filed an intervening petition but that the company had reached what appeared to be a satisfactory agreement with one short line by agreeing on a policy of through routes and joint rates even in cases where the longer road would be short-hauled.

Commissioner Meyer asked why the proponents of any merger plan should not come to the commission with suggestions for the treatment of the short lines in their territory. Mr. Bernet said there might be some embarrassments in a procedure of that kind because no system could be expected to take care of all the lines in the territory and one road would hesitate to suggest the allocation of the short lines to other roads.

Mr. Hitt then said he would like to have Mr. Bernet investigate the New York & Pennsylvania and Mr. Bernet said he would be glad to consider it if he would furnish a profile, a statement of physical condition, and especially a statement as to its traffic. When Mr. Hitt said he did not know whether this road had a profile Mr. Bernet remarked that it would undoubtedly be found to have a profile even if it had never been put on paper.

Mr. Colston said that the applicants had not come to the commission in utter disregard of the short lines but that he thought that they should first be treated with in outside negotiations. B. B. Cain, general counsel for the American Short Line Railroad Association, said that he

intended to insist that the commission keep the case open so that it might consider the effect of the merger on the short lines affected. Commissioner Meyer said that "the orphans of the territory" must be considered and asked Mr. Cain to file later a list of all the short line roads involved with suggestions as to the disposition of each.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 18 amounted to 922,778 cars, an increase of 5,494 cars as compared with the preceding week and of 45,862 cars as compared with the corresponding week of last year but a decrease of 35,264 cars as compared with 1923. As compared with last year increases were reported in all districts except the Central Western and in all classes of commodities except grain and grain products, which showed a reduction of 5,101 cars. Loading of miscellaneous freight showed an increase of 24,755 cars and coal loading showed an increase of 9,422 cars. The summary, as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING

Week Ended Saturday, April 18, 1925:

Districts	1925	1924	1923
Eastern	220,065	213,403	242,153
Allegheny	188,527	184,087	213,559
Pocahontas	43,890	37,064	38,955
Southern	150,438	132,907	141,316
Northwestern	121,976	112,947	121,872
Central Western	131,976	133,152	141,925
Southwestern	65,906	63,356	58,262
Total Western	319,858	309,455	322,059
Commodities			
Grain and grain products	31,693	36,794	38,113
Livestock	30,112	28,329	32,558
Coal	134,172	124,750	179,781
Coke	11,149	10,953	16,010
Forest products	77,109	75,162	80,139
Ore	20,602	16,581	19,905
Mdse., l. c. l.	258,226	249,387	238,594
Miscellaneous	359,715	334,960	352,942
Total	922,778	876,916	958,042
Cumulative total, sixteen weeks	14,527,672	14,207,854	14,118,428

The freight car surplus showed a slight reduction during the period ended April 14 to 343,048 cars, including 177,916 coal cars and 118,794 box cars. For the Canadian roads the surplus was 28,925 cars, including 25,650 box cars and 100 coal cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended April 18 totalled 49,855 cars, an increase over the previous week of 4,628 cars and only 124 cars under the same week last year, but the loadings in both these weeks were affected by the Good Friday and Easter Monday holidays. The largest increase was in merchandise loading which was heavier than for the previous week by 1,915 cars and over last year by 2,629 cars. Miscellaneous freight also showed improvement over both periods by 1,126 cars and 1,298 cars respectively.

Commodities	Totals for Canada			Cumulative totals to date	
	Apr. 18 1925	Apr. 11 1925	Apr. 19 1924	1925	1924
Grain & grain products	5,781	4,459	7,022	100,913	122,529
Live stock	2,183	2,080	1,961	36,022	34,431
Coal	2,018	1,922	4,775	75,191	78,825
Coke	216	249	110	4,873	3,976
Lumber	3,459	3,326	3,802	47,802	54,400
Pulpwood	2,114	2,419	2,156	60,156	61,704
Pulp and paper	2,091	2,032	1,903	33,756	34,124
Other forest products	2,467	2,489	2,624	50,325	49,059
Ore	1,175	941	1,202	18,477	15,726
Merchandise, l. c. l.	16,505	14,590	13,876	227,973	209,313
Miscellaneous	11,846	10,720	10,548	162,681	167,492
Total cars loaded	49,855	45,227	49,979	818,169	831,579
Total cars received from connections	32,293	32,375	32,820	531,836	555,874



The New Station at Boise Is a Handsome Structure

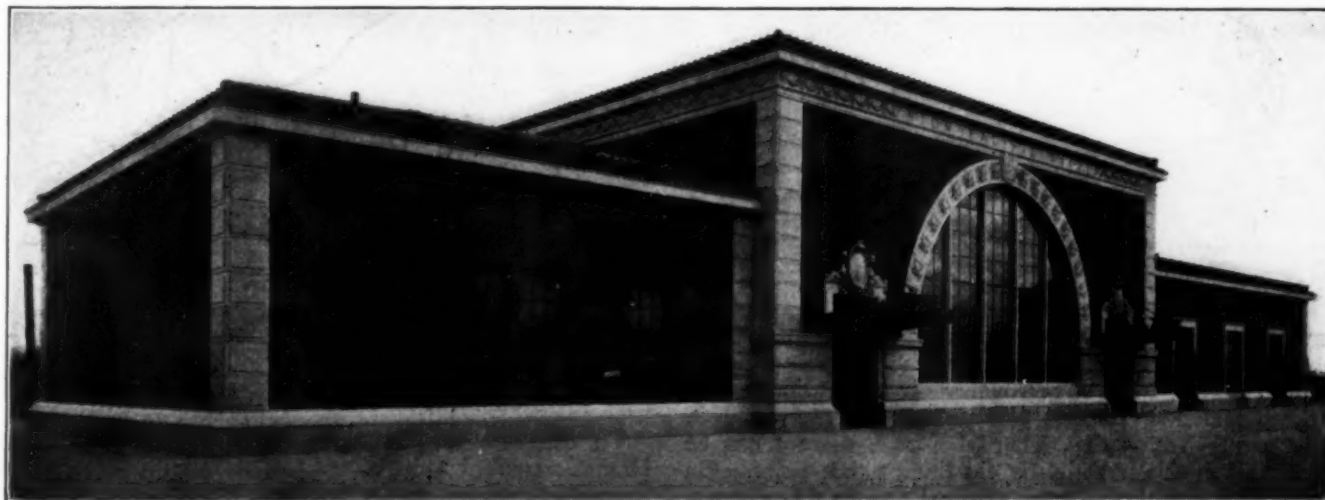
Alternate Main Line Gives Boise Through Passenger Service

New route on Oregon Short Line traverses unfavorable location but meets local requirements

BY combining 30½ miles of new line with 14 miles of an existing branch the Oregon Short Line unit of the Union Pacific has provided an alternate main line between Orchard, Idaho, and Nampa, the principal object of which is to provide Boise with long sought through passenger service. This project, which was only recently completed, and opened for traffic on

April 16 embraces the construction of a handsome station at Boise and a new commodious station at Nampa.

Boise is located in the valley of the Boise river and the site of the city and the territory immediately surrounding it had been subjected to considerable development at the time that the transcontinental route to the northwest was built in 1881. But the attractiveness of the water grade



The New Station at Nampa

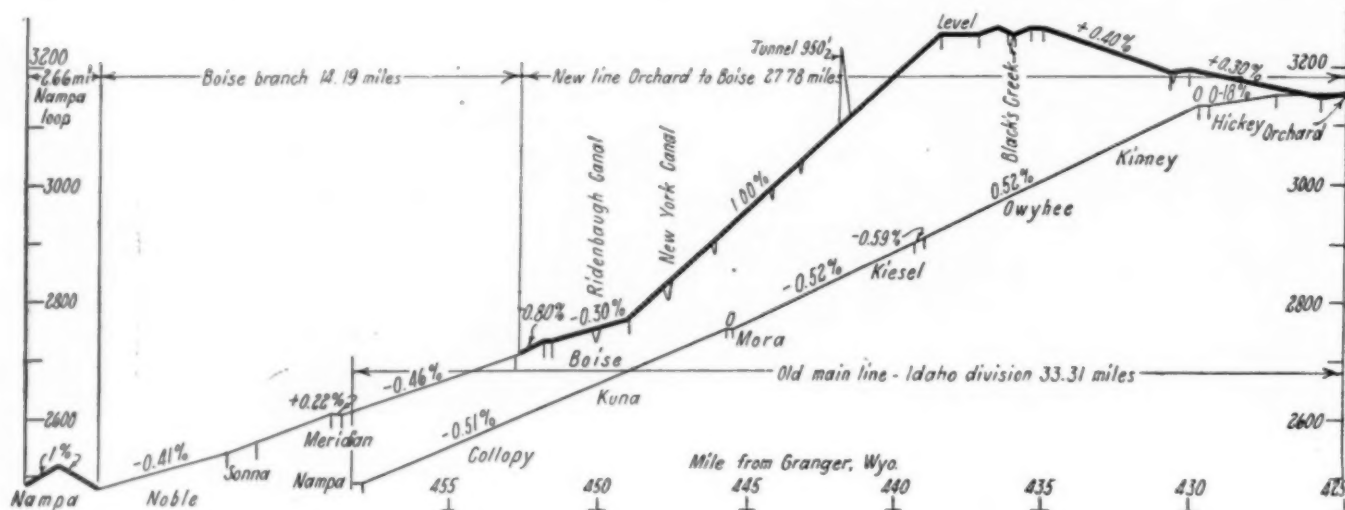
route along Indian creek between Orchard and Nampa, from the standpoint of distance, grade and economy of construction, led to the adoption of this favorable location rather than a longer route through the small settlement that was destined to become the state capital.

People of Boise Wanted Through Service

Boise was later provided with railway service by the construction of a 20-mile branch from Nampa. But with

is broken into five successive benches, making it necessary to obtain support for the grade by means of a rather tortuous alinement. At Milepost 17 a loop around the spur of a ridge required a 950-ft. tunnel and 243,850 cu. yd. of grading. In the 14 miles from the plateau to Orchard the line descends on a grade of 0.4 per cent and the grading is relatively light.

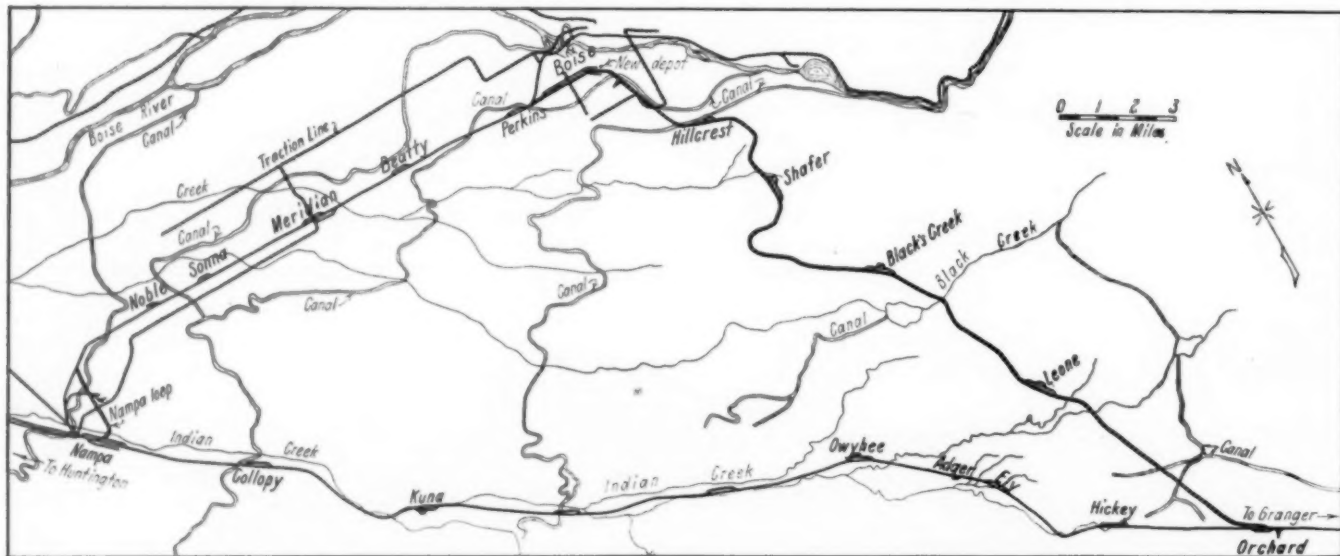
At Nampa the Boise branch connects with the main line in such a way that trains from the branch enter the



Profiles of the Old and New Lines Compared

the growing importance of the capital city continuous efforts were made to prevail on the Union Pacific to provide an alternate through main line route and numerous surveys were made to find the satisfactory location. For, whereas the branch line from Nampa to Boise

main line in an easterly direction or reverse to the direction of through movement over the alternate main line. To overcome this condition a loop was constructed, connecting with the branch two miles north of the town and entering the yard from the east with a wye connection



How the Boise Branch Was Incorporated in the New Through Route

traversed a relatively flat, open country, a line from Boise to Orchard must necessarily cross the natural drainage of the country, while a reasonably direct location entails a climb to the crest of a plateau approximately 100 ft. above the elevation at Orchard before a descent can be made to a junction with the old line at that point. On the line as located the ascent from Boise to this plateau, at Milepost 14 from Orchard, is made on a one per cent grade. The natural rise of the country in this distance

that brings the Boise line trains into the station in the normal direction.

Rehabilitate Part of Branch Line

To complete the through line between Orchard and Nampa required the use of 14.19 miles of the Boise branch in addition to the new line construction. But as the alinement and grade on this portion of the branch met the requirements of the through line no physical

changes of the branch line were necessary, other than a general ballasting program.

The new line construction involved 1,011,005 cu. yd. of grading, which was handled under contract by the Utah Construction Company of Salt Lake City. Over a large part of the mileage, the grading was handled by teams but steam shovels were used on three miles of heavy excavation about 10 miles east of Boise. The bridge work was generally light, consisting in large part of the construction of standard frame or pile trestles with open decks covered with sheet-metal fire protection. The only other structures are a 110-ft. through plate girder span and a 70-ft. deck plate girder span to bridge irrigation canals where bents could not be placed in the canals.

Treated ties 7 in. by 9 in. by 8 ft. were used throughout. The rail is new A.R.A. 90-lb. section with continuous joints. Tie plates were provided on all ties and rail anchors were installed. The ballast is gravel. The line has been equipped with automatic block signals and the construction as a whole is designed to permit of reasonably high speed. Four stations were established on the new line between Boise and Orchard, three with 4,000-ft. passing tracks and one with a 600-ft. loading track. The turnouts have No. 10 frogs and 16 ft. switch points.

The New and Old Lines Compared

As stated above the new through route was established to meet the demands for through passenger service for Boise. From an operating standpoint the new line is less favorable than the old one, since it is 11.3 miles longer and imposes 1.0-per cent grades against eastbound movements, as compared with 0.59 per cent on the old line. It embraces several miles of 0.4-per cent grade opposing westbound movements, whereas the old line is entirely down hill westbound. In view of this condition the new line will not ordinarily be used for any through freight trains. However, in view of the fact that the westbound grades on the new line are light the new line will prove useful during periods of heavy traffic in relieving the old line of the westbound trains and thus increase the capacity of the old line for the handling of eastbound trains up the long ruling grade. The following table gives a comparison of the physical features of the new and old lines:

	New line	Old line
Length	44.63 miles	33.31 miles
Maximum curvature	3° 40'	3° 00'
Total curvature	1.195°	353°
Total curvature—length	9.85 miles	6.38 miles
Average curvature per mile	26° 46'	10° 45'
Ruling grade, ascending, west	0.4 per cent	none
Ruling grade, ascending, east	1.00 per cent	0.59 per cent
Total ascents, west	177 ft.	none
Total ascents, east	843 ft.	664 ft.
Bridges	(27) 1,606 lin. ft.	(8) 572 lin. ft.
Tunnels	(One) 950 ft.	none

One of the outstanding features of the project is the passenger depots at Boise and Nampa. The Boise station, designed by Carrere and Hastings, New York, is of the Spanish mission type, constructed of brick with a white stucco surface. It is substantial and commodious, a tribute to the capital. It is located on the first bench above the valley in direct line with the front of the capitol building, about a mile distant. Plans proposed by the city provide for a boulevard from the capitol to the depot and a small park across the driveway directly in front of the depot, on the edge of the bench overlooking the valley. The station may be seen from great distances and a system of flood lights makes it a landmark.

The waiting room is pleasing. All auxiliaries, rest room, smoking room, ticket office, telegraph office, telephone booths, etc., are located outside of the rectangular

lines of the waiting room. The ceiling is high and roof trusses are exposed, as in an old church. The floor is of tile. Ornamental cast iron grilles in front of the ticket offices add to the general attractiveness.

At Nampa a commodious and pleasing depot has been built, G. S. Underwood, Hollywood, Cal., being the architect. In this depot also, particular attention has been given to making the waiting room and utilities connected therewith convenient. At both cities platforms built of brick with concrete curbs have been provided.

C. P. R.-C. N. R. Merger Talk Gathers Momentum

THERE was more talk in Ottawa last week on the subject of the merger of the Canadian Pacific and the Canadian National and also of co-operation between the two roads. Before the standing House Committee on National Railways and Shipping, of which W. D. Euler is chairman, Sir Henry Thornton outlined some of the means by which savings could be made, and in the House itself in the debate on the budget, S. W. Jacobs, one of the Montreal members, suggested that the Canadian Pacific should take over the Canadian National.

"In your opinion would not the real solution of the problem be found if the two roads were entirely merged?" asked W. D. Euler of Sir Henry Thornton.

"That develops a very broad question," replied Sir Henry. "You will save more money that way than any other way. I can say that if, by any chance such a thing could come about, such savings which would result could be characterized only as enormous."

"Would you care to put a figure on it?" asked Sir Henry Drayton.

"I think that it is quite within the bounds of reason to say that if such a thing should come about—and I express no opinion as to whether it will—we could substantially produce net earnings which would be sufficient to meet the fixed charges of both companies," responded Sir Henry.

"I have always been opposed to public ownership when private ownership can be made to apply," said Mr. Jacobs, speaking in the House, "because I believe in the efficiency of private ownership. I believe that private ownership has been able to accomplish everything that has been accomplished so far in this world, and that public ownership, or the interference by governments and by governing bodies generally, has always been a brake and detriment to progress. I feel that the temper of the people is in favor of some change in our railway policy, and that the sooner we do something along these lines the better it will be for the government and for the country. Our people will not stand very much more of this tinkering with our railway system. It is a running sore, it is something which must be cured. We have to do something, and at once."

"If we must have a monopoly it must be a public one. We are not going to place ourselves at the mercy of a private railway," said William D. Euler.

He urged amalgamation of the Canadian Pacific with the Canadian National under public control. He presented three schemes of carrying on the two principal railways in the Dominion: "We can continue as we are, run our roads in as close co-operation as possible with the Canadian Pacific Railway, making savings wherever we can, but running as two independent systems. I believe much can be done that way, and with a reasonably good year I believe that we will come very close to paying fixed

charges to the public. If we continue in that way I believe that something should be done by way of writing down the capitalization of the National Railways so that they will be placed on some sort of basis that will enable them to go on as they would be able to do under private ownership.

"Then we have the second plan—combine under Canadian Pacific Railway ownership. I am not going to discuss that any more, because I think it should not be very seriously discussed.

"Third, combine the National Railways and the Canadian Pacific Railway into one great public-owned system. That in my opinion is the proper solution, a solution which seems perhaps impossible, may I say, because of its apparent magnitude or because men's minds have not learned to adjust themselves to so big an undertaking, but which in my opinion will be forced eventually by the logic of facts. If anyone had said ten years ago that five great railway systems in Canada would now be combined into what is known as the Canadian National Railways, they would have found very little credence with the Canadian public; but we have them combined into one system to-day.

"Let me repeat, if \$100,000,000 can be saved to this country by a union of the two great railway systems, it constitutes a challenge to parliament and to the government, and I believe the people of Canada will expect some sort of action, even if it be only investigation of what I say. I think it can in duty do nothing less, and if it finds it true, its duty is so clear that the neglect of it, I think, would be inexcusable. . . ."

Co-operation in Eliminating Competition

The movement for closer co-operation between the Canadian Pacific and Canadian National to effect economies by eliminating needless competition is considered to have received something of a setback due to developments during the week. A circular letter to employees of the Canadian Pacific accredited to E. W. Beatty, the president, which was meant to be confidential, was published by a Toronto paper. The letter, as reported in this paper, read:

On May 23, 1923, I addressed a circular letter to you on the subject of maintaining the company's reputation for courtesy to

its patrons, and asking you to use your best efforts to foster and promote the excellent reputation which it has earned.

Since that time you have had two years of experience in meeting competition of an active and intensive character involving extensive propaganda and publicity of a kind which would not be open to a private institution. This competition has been accompanied with lavish expenditures of the public moneys, and this is, of course, the principal factor in it. We all appreciate that fundamentally it is in many respects competition of an unfair kind, but it has been successfully met by unfailing zeal and loyal service on the part of the company's officers and employees.

Sir Henry Thornton later had the following to say about the report:

I have nothing to say, excepting to point out that for the year 1924 the Canadian Pacific Railway expended on traffic account \$8,341,350, or 4.61 per cent of its gross earnings, and the Canadian National Railways System spent \$6,892,751, or 2.93 per cent. Expenses chargeable to traffic represent largely the money spent in securing business.

The figures I have given speak for themselves and need no elaboration on my part. The Canadian National Railways System has only pursued accepted business methods in the solicitation of its traffic, and the public can decide whether those methods have been unfair.

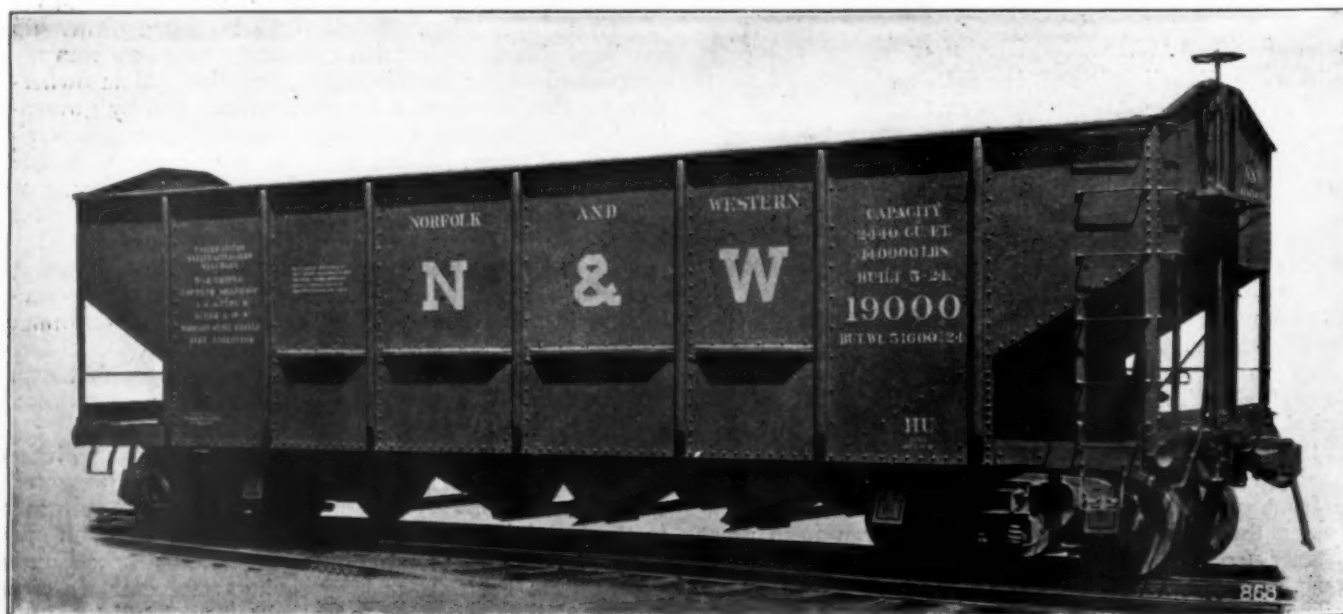
Coming at a time when there is a public desire for co-operation between our two principal railway systems and the consequent elimination of unnecessary competition, I do not think it would be appropriate to make further comment.

Mr. Beatty issued a statement concerning the company's circular published in Toronto which reads in part as follows:

The statement referred to is apparently based upon a confidential communication sent to our officers bearing plainly upon it the word "confidential." It will not be denied, I presume, that Canadian Pacific officers have the right to discuss among themselves the railway situation as it appears to them.

A comparison of the traffic expenses of the two roads, without an explanation of what is included in each, would be entirely misleading. In the Canadian Pacific traffic expenses are included the expenses of its Oriental and European organizations, whose work is largely in connection with steamship service. Eliminating these expenses, the amount chargeable to the rail lines for 1924 is \$5,769,000, or a slight decrease under those of the previous years, as against the National figures of \$6,892,000, an increase of \$1,099,000 over 1923.

The fact that competition between a private institution and the Government-owned property has elements which are fundamentally and inherently unfair to the former is so obvious as to require no elaboration from me. The question of co-operation between the two companies, which is, none the less, being taken up seriously and in a perfectly friendly way by Sir Henry Thornton and myself, is one rendered desirable by existing traffic and cost conditions.



140,000 lb. Capacity Hopper Car Built for the Norfolk and Western by the Standard Steel Car Company

St. Louis Southwestern Has Had Interesting History

Control of Cotton Belt gives Rock Island improved strategic position in future merger negotiations

"YOUR company," says President J. E. Gorman in the Rock Island annual report issued this week, "has acquired a substantial interest in the St. Louis Southwestern, whose lines extend from St. Louis through a very productive territory in Arkansas and north Texas to Fort Worth and Dallas, and which we think will make an effective complement to our own lines."

"We do not contemplate a consolidation or merger at this time, but expect through this stock ownership to effect some economies in operation of both companies. In addition to the other benefits, it is expected that the return on investment by way of dividends will more than cover the carrying charges. Our investment is almost entirely in preferred stock."

These details add little that is new to the information made available at the time, about six weeks ago (*Railway Age* of March 14), when announcement was made that the Rock Island had acquired a majority stock interest in the Cotton Belt and had elected four of its representatives to the Cotton Belt board of directors. Inclusive of the stock purchased from the Goulds, as well as in the open market, the Rock Island holdings amount to about 150,000 of a total of 198,936 shares of preferred outstanding. Apparently the Rock Island also owns enough of the common to give it a majority of the total \$36,249,750 preferred and common combined. The Rock Island has pledged the Cotton Belt stock which it owns as collateral for loans, from the proceeds of which it was able to buy the Cotton Belt shares for cash. The Cotton Belt preferred stock receives 5 per cent dividends. It will be noted that Mr. Gorman says that these dividends on the stock which the Rock Island owns are expected to be more than sufficient to cover carrying charges on the loans.

The Last of the Gould Roads

None of the several recent acquisitions of one railway by another exceeds in interest this acquisition of the Cotton Belt by the Rock Island. The Cotton Belt is the last of the roads to be given up by the Goulds. The St. Louis Southwestern, it is true, was not as closely tied in with the Gould system as were most of the others, such as the Missouri Pacific, the Texas & Pacific, the Denver & Rio Grande, the International & Great Northern, the Wabash and the Wheeling & Lake Erie. What we more commonly know as the Gould system was that group of roads named headed by Jay Gould and later by George J. Gould. It was this system that the Goulds aspired to make extend from coast to coast and which came to disaster through the efforts to enter Pittsburgh and through the general transportation ineptitude of the then head of the Gould family. The Cotton Belt was headed by Edwin Gould. The Cotton Belt never suffered, as did the other Gould roads, from the Gould debacle. On the contrary, it developed increasing prosperity, avoided the receiverships to which all the other Gould roads were subjected, and now comes into the Rock Island system as a valuable acquisition in

good enough financial shape so that it has no difficulty in earning a very fair margin over its 5 per cent preferred dividends. It leaves the Goulds in a very different manner from the roads which formed more strictly the real but ill-fated Gould system.

What of the Future?

Even with this, however, there is more interest concerning what may take place in the future than there is relative to that which has taken place in the past. There is a general belief, for instance, that the Southern Pacific has plans to acquire the Rock Island, and indeed such was suggested in the Interstate Commerce Commission's tentative consolidation plan. The Southern Pacific's interest results from its desire to have a through line to Chicago via the recently acquired El Paso & Southwestern via El Paso, Tex., and Tucumcari, N. Mex., and thence via the Rock Island. The question arises as to whether this possible acquisition of the Rock Island by the Southern Pacific has anything to do with the already accomplished acquisition of the Cotton Belt by the Rock Island. There is a belief in some quarters that the Cotton Belt has been purchased in Southern Pacific interest.

Another and diametrically opposed belief is to the effect that the Rock Island acquired the Cotton Belt as a defensive trading measure. The point is that the Southern Pacific has a line, the Houston & Texas Central, from Houston, Tex., north to Dallas and Fort Worth; another, the Houston East & West Texas from Houston to Shreveport, and now a third, the San Antonio & Aransas Pass which reaches north to Waco, Tex. Connection is made at each of these points, namely, Dallas, Fort Worth, Shreveport and Waco, with lines of the Cotton Belt, thereby making possible the creation or strengthening of two traffic routes between Houston and St. Louis or of three, including the S. A. & A. P. between the Southern Pacific and the gateways to the North, additional to the present route via Tucumcari. The question seemingly is as to whether the Southern Pacific, in its efforts to procure a line to St. Louis or Chicago, might not have been able to play this situation against the importance of the present traffic route via Tucumcari, in other words, to play in its consolidation efforts the owners of the Rock Island against the owners of the Cotton Belt. However one may look at it, it is patent that with the Cotton Belt in Rock Island control, the latter company is in a much improved strategic position. It seems unnecessary to engage in more or less fruitless surmise as to whether the Rock Island and Edwin Gould saw this and got together in self-interest, whether it was due to skill on the part of the Rock Island's owners, due to mere chance, or what.

The Cotton Belt Lines

The Cotton Belt operates a total of 1,777 miles of line, of which 970 is operated by the St. Louis Southwestern and 807 by the St. Louis Southwestern of Texas. The lines of the former extend from St. Louis to Texarkana with branches to Cairo, Memphis, Little Rock, Shreve-

port, etc. The lines of the latter extend from Texarkana to Fort Worth with branches to Dallas, Sherman, Hillsboro, Lufkin, etc. The operation into Memphis is over a line of the Rock Island. Between Thebes, Ill., and St. Louis the Cotton Belt uses the low grade line of the Missouri Pacific on the east side of the Mississippi river, and the latter uses the Cotton Belt for freight service in preference to its own less favorable grade line between Illmo (across the river from Thebes) and Paragould, Ark.

It will be seen that the Cotton Belt reaches the important distributing centers of Shreveport, Dallas, Fort Worth, Texarkana and Waco and into a territory which of late years has had remarkable expansion due to oil and agricultural development. Its direct line is in marked contrast to the indirect routes of the Rock Island, one of which, to be sure, reaches Fort Worth and Dallas but from the north and with roundabout connections to Chicago or St. Louis. The line to Eunice, La., primarily a feeder of lumber traffic, extends north only to Memphis. The Rock Island in the past has not been an important factor in Texas business; with the Cotton Belt it should prove to be one. It is of particular interest, in view of the broader phases of the situation, that the line of the Cotton Belt to Shreveport and the Houston East & West Texas from there to Houston is approximately the same distance as the Missouri Pacific, Texas & Pacific and International-Great Northern route utilized by the famous Sunshine Special.

Interesting History

The Cotton Belt has had an interesting history. It originated in the Texas & St. Louis, a road of 3-ft. gage opened in the latter part of 1880 from Texarkana west primarily to carry lumber. The road was gradually extended in succeeding years. It was fairly successful but handicapped because of inability to come to reasonable terms concerning traffic relationships with the St. Louis, Iron Mountain & Southern. Accordingly, Colonel

improvement of their lines, acquired new equipment and constructed various extensions but soon were again in receivership in May, 1889. The property was reorganized a second time in 1890 in three separate companies; the St. Louis Southwestern, the St. Louis Southwestern of Texas and the Tyler Southeastern, the third being acquired by the second in 1899. It was about this time that Edwin Gould's name appeared in connection with the property, he having been elected a director in 1889. For a time he was secretary and then first vice-president. It is of interest, also, that about at this time there was an attempt on the part of the Illinois Central to purchase the property, which did not come to fruition because the Central finally decided not to go west of the Mississippi river. It has since gone back on this decision in its recent acquisition of the Vicksburg, Shreveport & Pacific.

Bridge at Thebes

Prosperity finally came to the Cotton Belt beginning about in 1895, in which year a bridge was built across the Mississippi at Thebes, in which the Cotton Belt had a fifth interest. Trackage rights over the St. Louis, Iron Mountain & Southern were secured for access into St. Louis. By this time, lessening competition of Michigan lumber had created an increased demand for lumber from the south. Better control of the Mississippi river had finally made possible realization of the advantages of the low-grade line without the former drawbacks of the location of that line. This land, largely through the Cotton Belt's own efforts, has become a region of agricultural prosperity yielding much high grade traffic. Supplementing this has been the oil development of Texas and the prosperity resulting therefrom to practically all the carriers serving the Southwest.

Diversified Traffic

The Cotton Belt's traffic today is fairly diversified. In 1923, the total revenue tonnage was divided as follows: products of agriculture, 16.11 per cent; products of ani-

ST. LOUIS SOUTHWESTERN OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1924.											
Year ended June 30	Mileage	Revenue tons	Revenue ton miles	Average haul	Rev. per ton miles cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Net after charges
1914.....	1,817	3,638,795	833,231,555	229	1.13	290	15.37	12,977,689	9,952,415	3,025,274	370,201
1915.....	1,817	3,265,666	749,618,142	230	1.06	301	15.47	10,730,726	8,448,727	2,281,999	279,490
1916.....	1,817	3,850,994	893,762,749	232	1.04	340	15.97	12,336,135	8,498,919	3,837,216	1,288,826
Year ended Dec. 31											
1916.....	1,817	4,103,575	958,902,362	234	1.09	347	16.36	13,964,462	9,409,384	4,555,078	2,230,107
1917.....	1,817	5,120,930	1,273,784,094	249	1.03	426	18.60	17,448,824	11,000,559	6,448,265	3,878,250
1918.....	1,813	4,905,137	1,241,307,723	253	1.16	447	21.02	19,627,056	15,888,609	3,738,447	917,061
1919.....	1,785	4,781,562	1,140,762,995	239	1.39	460	19.51	20,689,423	18,565,587	2,123,835	1,417,331
1920.....	1,806	6,382,915	1,816,243,738	285	1.39	520	21.87	31,057,823	25,972,252	5,085,572	2,939,025
1921.....	1,786	5,155,041	1,296,500,811	252	1.61	464	20.56	25,153,462	19,112,553	6,040,909	2,477,685
1922.....	1,776	5,353,997	1,535,404,954	287	1.45	506	20.24	26,159,914	20,007,426	6,152,489	2,256,679
1923.....	1,777	6,365,897	1,697,769,155	267	1.45	511	19.98	29,551,120	21,990,212	7,560,908	3,401,092
1924.....	1,777	.....	.....	...	....	...	....	26,326,291	20,027,914	6,298,377	2,364,369

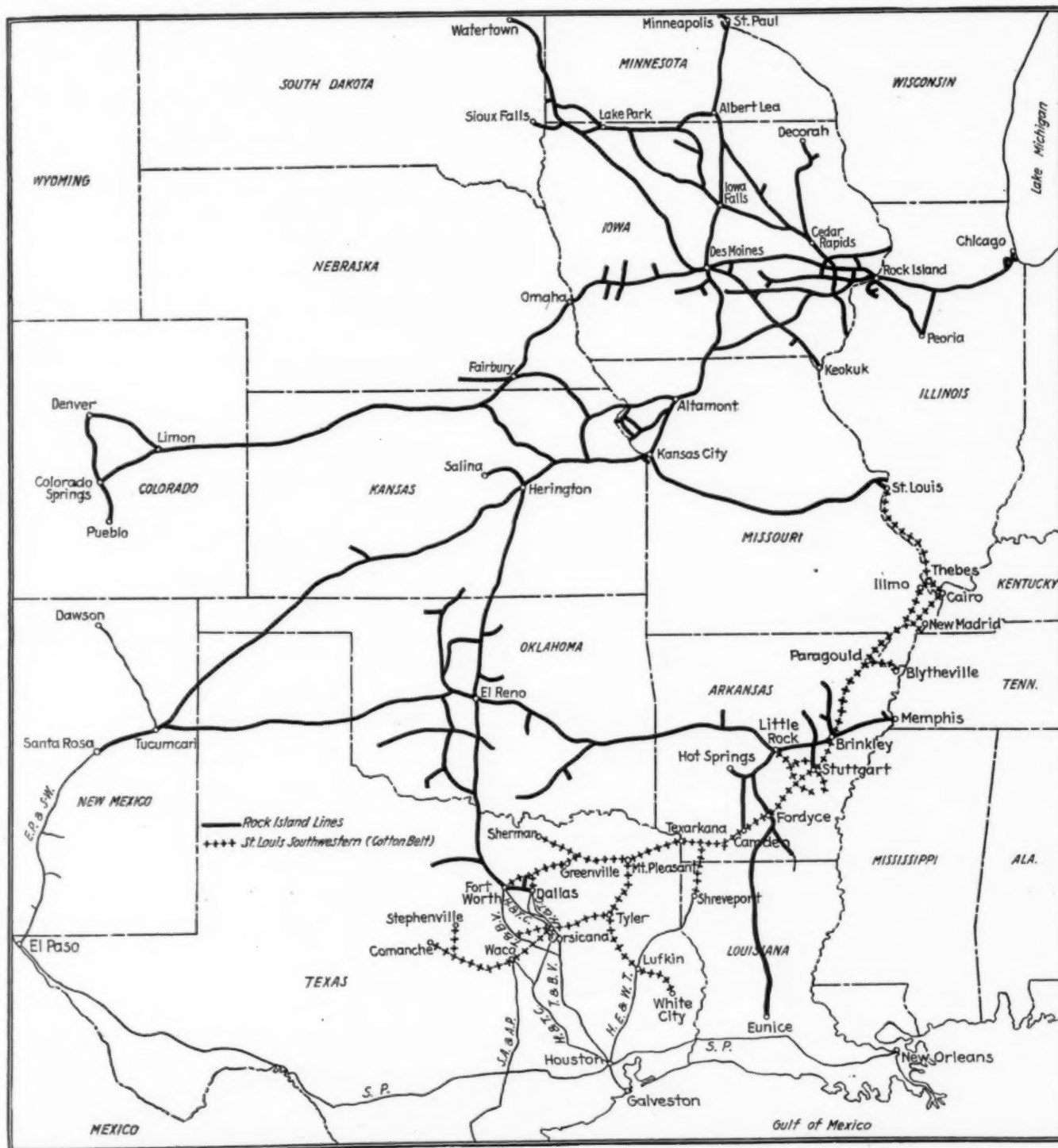
J. W. Paramore, its owner, decided to build a line of his own to the north. He built such a line, also of 3-ft. gage, from Texarkana to the Mississippi river at Bird's Point, opposite Cairo, under the name of the Texas & St. Louis of Missouri and Arkansas, which became the parent company. The line was cheaply built through a country of extremely adverse conditions from a railroad point of view. The country it traversed was low, the Mississippi river was unprotected and between the water and mud the operating difficulties were found to be practically unsurmountable. At any rate, the Texas & St. Louis became bankrupt, went into receivership in 1884 and after a time was reorganized in the early part of 1886 as the St. Louis, Arkansas & Texas, there being two companies as before. The new companies widened the gage of their lines to 4 ft. 8½ in. and spent considerable money for

mals, 1.10 per cent; products of mines, 25.61 per cent; products of forest, 28.33 per cent, and manufactures and miscellaneous, 28.85 per cent. The largest single item was refined petroleum, constituting 7.87 per cent of the road's total revenue tonnage total revenue ton miles in 1923 were more than 50 per cent greater than in 1916. The result was to increase gross and net substantially, net railway operating income in 1923, for instance, being 142 per cent of the standard return for operations during federal control. The marked increase in business has necessitated a substantial program of additions and betterments. Dividends on the preferred stock were paid from 1909 to 1914 but not again until December, 1922. In the period when no dividends were paid the larger part of the net after charges which, since 1916 particularly, has been substantial was put back into the property.

Physical Standards

The Cotton Belt has but little passenger service and is not built or maintained for such service. Of the road's owned mileage of 1,529 at the end of 1923, 386 miles were laid with 85-lb. rail, 683 with 75-lb., most of the rest with rail of but 56-lb. The road then had 201 miles

For the past four years Cotton Belt earnings after charges have averaged, after allowance for the 5 per cent dividends on the preferred, nearly \$10 a share on the common stock. In 1924, net earnings after charges were \$2,364,369, equivalent, after allowance for the preferred dividends, to \$8.37 per share. Net in 1923 was \$3,401,092



How the Cotton Belt Fits in with the Rock Island System

of its track ballasted with rock, 562 with gravel, 206 with burnt clay, and 123 with cinders; 453 were not ballasted.

The fly in the Cotton Belt ointment is its capitalization. As of December 31, 1923, it had outstanding \$66,907,750 funded debt and \$36,249,750 capital stock. The Interstate Commerce Commission's tentative valuation was considerably below the company's book value.

(the greatest in the company's history with the exception of a single year) equivalent to \$14.71 per share. Net of \$2,256,679 in 1923 was equivalent to \$7.72 per share. It will be noted that the company did not do quite as well in 1924 as in 1923. This is shown further in net railway operating income which, in 1923, was \$5,564,801, equivalent to 142 per cent of the standard return for operations

during federal control but which in 1924 was \$4,686,370, equivalent to 120 per cent of the standard return. It is significant that whereas the roads in the southwestern region as a whole moved 10 per cent more net ton-miles in 1924 than in 1923, the Cotton Belt moved less, the reduction in the case of the St. Louis Southwestern being 17 per cent and in the case of the St. Louis Southwestern of Texas being 8 per cent. It is apparent that the rejuvenated Missouri Pacific must have accomplished some of its results at Cotton Belt expense. The strengthening of the Cotton Belt's relative strategic position due to its affiliation with a stronger property, such as the Rock Island, should be of importance in such a situation.

Traffic Relationships

The Cotton Belt is essentially a bridge line between St. Louis on the north and Texas points and Shreveport, La., on the south. It has been very successful in developing a fast freight service between St. Louis, and Dallas and Fort Worth. This consideration alone makes its control of great advantage to the Rock Island.

The Rock Island's greatest handicap in the South has been its inability to secure any considerable revenue from the very large amount of traffic which originates on its lines in Louisiana and Arkansas. This traffic has been in the past ordinarily routed over the Rock Island to Memphis, Tenn., where it has been turned over to the Illinois Central, the Southern, the Louisville and Nashville and the Nashville, Chattanooga & St. Louis. Thus the Rock Island's haul on the traffic has been short. It has not been profitable, on the other hand, to attempt to route this traffic to St. Louis, its natural market, over the Rock Island lines exclusively, since it would have had to be taken west to El Reno, Okla., then north to Kansas City, Mo., and east to St. Louis.

Now, however, with its large interest in the Cotton Belt, it will be natural for the Rock Island to route the heavy traffic originating on its lines to the junction with the Cotton Belt at Fordyce, Ark., and thence over the line of the Cotton Belt into St. Louis. With its own direct line into St. Louis the necessity of turning over the traffic to other connecting lines in Memphis will be removed and it is probable that the interchange between the Rock Island and the lines east of the Mississippi river at Memphis, will be considerably reduced.

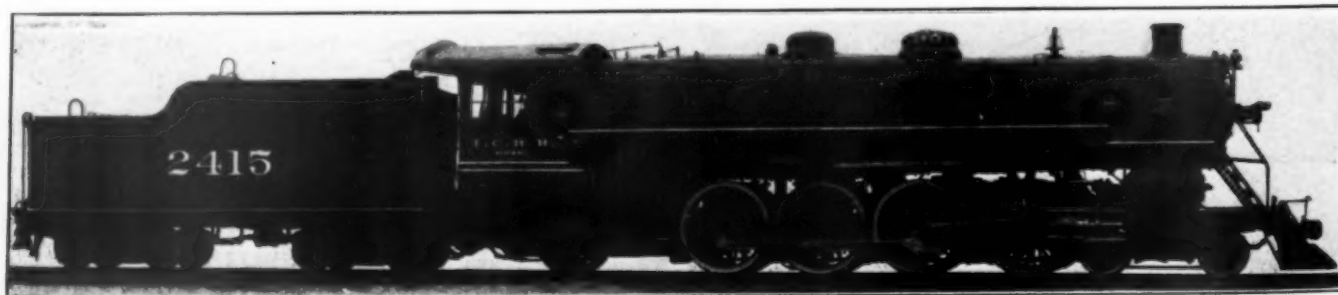
Due to the greatly augmented traffic into St. Louis which the Rock Island and the Cotton Belt will be able to provide under the new arrangement, these roads will be in a position to trade more extensively with the eastern lines terminating there, and thus secure a proportionate southbound traffic in return for the heavier northbound

traffic which they will turn over to eastern lines. While the benefits from this will accrue in large measure to the Cotton Belt, it is not unlikely that the Rock Island line from St. Louis west via Kansas City into Kansas, Oklahoma and Texas will also benefit to an appreciable extent.

Due to its peculiarly fortunate physical position the Cotton Belt will not find it difficult to handle the augmented business over its lines to St. Louis even with its present facilities. Although its grades are rather heavy, being 2 per cent at the southern end, this grade is gradually reduced as the line proceeds to the north until a maximum grade of only 0.5 per cent is encountered on the northern half of the Texas to St. Louis line. As a result of this fortunate operating position, the Cotton Belt is able to consolidate the train loads entering the main line from the various branches of its line into much heavier trains on the north end of the route. This naturally will result in a saving in transportation expenses in spite of the greatly increased traffic.

The Rock Island and the Cotton Belt have a large number of connecting points, the most important being at Dallas, Memphis, Little Rock, Fort Worth, Brinkley, Ark., Stuttgart, Camden and Fordyce. It is not expected, however, that there will be any general consolidation of facilities at junction points or a wholesale transfer of business from one line to another to secure the shortest haul. Over parallel lines or in places where lines of both the Rock Island and the Cotton Belt serve the same point, there will undoubtedly be an interchange to secure the benefit of the short haul but with an arrangement so that the greater part of the revenue for that transportation shall accrue to the originating lines.

The Rock Island and the Cotton Belt plan to consolidate their facilities at Dallas, making necessary the construction of a large new terminal. This will necessitate the termination of the agreement between the Cotton Belt and the Santa Fe for the joint use of the Santa Fe facilities at Dallas. At Fort Worth nothing in the way of consolidation of facilities will be undertaken until an extensive study of the terminal situation at that point has been made. It is probable that when such study has been made there will be a general consolidation of the facilities of all the railroads in Fort Worth. At other junction points, however, it is unlikely that there will be any extensive joint use of facilities which might result in a considerable gain of business to either the Rock Island or the Cotton Belt at the expense of the other. The Cotton Belt probably will not abandon its joint facilities with the Illinois Central at Memphis nor is it likely that the facilities of the Rock Island and the Cotton Belt will be combined at Little Rock, Ark., Stuttgart, Camden and other points.



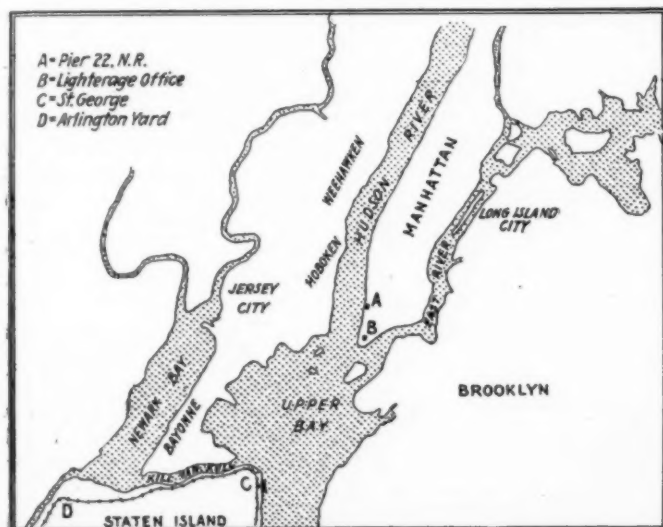
Mountain Type Locomotive Built for the Illinois Central by the Lima Locomotive Works

Cylinders, 28 in. by 28 in.; boiler pressure, 200 lb. per sq. in.; diameter of driving wheels, 73 in.; maximum tractive force, 51,100 lb.; factor of adhesion, 4.83; grate area, 75.4 sq. ft.; average weight of engine in working order, 367,500 lb.; weight of loaded tender, 205,300 lb.; water capacity of tender, 10,000 gal.; fuel capacity of tender, 18 tons.

The Automatic Printing Telegraph for Intra-City Business

Receiving machines work without attention—System also better than telephone for some messages

ALMOST ideal promptness, increased accuracy and a decided saving in labor are listed as the important improvements in service which the Baltimore & Ohio has accomplished at its New York city freight terminals by the introduction of the Kleinschmidt type-writing telegraph apparatus, for recording at all offices simultaneously, the arrival of carload shipments of lighterage and perishable freight, and as an instrumentality in



New York City—B. & O. Freight Yards and Offices

giving notice to consignees of such arrivals with all necessary fullness and detail. As compared with the telephone or with ordinary telegraphic communication there is the advantage of a full and detailed record, always legible, with any desired number of copies, as well as a saving in time; and, as compared with messenger service, there is, of course, a much greater saving in time.

This apparatus has been in use about 18 months. The Baltimore & Ohio freight terminal yards on Staten Island are at St. George, five miles across the bay, southwestwardly, from the Battery, and at Arlington five miles west of St. George.

Arlington is the general freight yard and St. George is the terminus where freight is unloaded from cars into lighters and where cars which are to be taken to final destination before being unloaded are placed on car-floats. Ordinary freight is stopped at Arlington but carloads of perishables are taken direct to St. George; and so there are two yard offices, each equipped to telegraph to the two offices across the bay.

Waybills arriving are taken in hand at once at the yard office by a typist (for ordinary freight at Arlington and for perishables at St. George) who makes full copies of them (on regular way bill blanks) to be kept with the car, the original being sent to the central local freight office at Pier 22, Manhattan (shown on sketch as A); but in his typing the clerk is simultaneously telegraphing the same information to Pier 22 and to the lighterage bureau

at 25 Broadway (B); this to give Pier 22 advance information, and to enable the lighterage bureau to give early information to consignees. The lighterage office also makes a copy for the information of the traffic department, which is located in the same building. All of these offices are therefore in shape to perform their functions well in advance of the arrival of the freight at its point of delivery—which may require a water journey of anywhere from five to ten miles. Pier 22 makes the freight or expense bill, the lighterage office notifies the consignee (or connection) and the traffic department responds to inquiries from parties expecting freight.

The message is automatically written out, at A and B, in exactly the same shape as at the sending station, except that plain paper (not a printed waybill blank) is used; and, the receiving machine being automatic, these receiving offices take the message just the same if it is sent, say at 3 a. m., when the clerks are all absent, as would be the case in regular business hours. The clerk at the Manhattan end, who takes charge of these communications, arriving in the morning, finds the bills which have been transmitted during the night written out on a short or a long strip of paper (according to whether the items



The Sending Operator at Arlington

are few or many) and he proceeds to tear them apart as would be done after each communication in daytime business hours.

The apparatus is, of course, available for ordinary communications as well as for freight notifications; and is, indeed, thus used. There are numerous messages, requiring an answer, for which this method is more satisfactory than the telephone. For example, a clerk in the lighterage office, making of Arlington a request for the car numbers (and initials) of a certain shipment, instead of using his ear to receive the response and his pen or pencil to write down the number, simply telegraphs his request, and then turns to other duties; and in due time

he finds his answer in the shape of a typed message in the telegraph machine, the sender at Arlington having started the receiving printing instrument in Manhattan, sent the message, and thereafter stopped the instrument.

The Kleinschmidt apparatus is of a type similar to that used extensively by the Western Union Telegraph Company for rapid transmission on its heaviest traffic routes.

10/40 A M		2/28/25 QD			
		2/24/25		750	
B&O 90460		1733 CHICAGO ILL			
2521 ST GEORGE LTGE N Y		NATIONAL MERCANTILE CO			
B&O RR LTGE FREE					
JOHN J JONES QD		NEW YORK CITY			
FOR EXPORT					
300 BAGS FLOUR		60000		31 1/2 189 00	
MARK GLASGOW		ALLOW INSPECTION			
PRO NUMBER 150610		2/28/25			

Telegraphic Copy of Waybill

A typist, using the standard typewriter keyboard, does the "sending"; that is, in fingering the keys, as in ordinary typewriting, the typist sends the electric impulses over the line, and an automatic typewriter at the destination office writes the message on a blank which is like the ordinary

telegraph blank. The receiving operator (first reading, to make sure that the message is being transmitted without failure) simply tears off each message as it is completed.

This apparatus is made by the Morkrum-Kleinschmidt Corporation, Chicago and New York (Long Island City). It is used on a simple grounded circuit, not duplexed. The speed of transmission is much greater than ordinary Morse, but yet is not so fast as with the automatic apparatus in which tape transmission is employed. Four machines are connected in series. The circuit is from Pier 22 through a telephone wire to 25 Broadway, thence under the Hudson River in a cable, thence on a telegraph pole line through Bayonne and then by another cable across Kill van Kull and on poles to Arlington and St. George. The machines are connected direct without the use of line relays. The machines on Staten Island have alternating current motors, while the other two have direct current motors. The typists write about 63 words a minute. When a message is finished, the sender, by pressing a key, stops the motors at all four points. The operator at any one of the four stations may start all four by pressing another key. Thus, as has been explained, the machines may be used at all hours, regardless of the presence or absence of an attendant at the receiving station. The machines are made with all parts very strong; one of them has been kept in operation ten months without a single trouble call. The apparatus is simpler than that required for the faster transmission.

The paper for receiving is fed from rolls four inches in diameter and the feed is entirely automatic, as before explained.

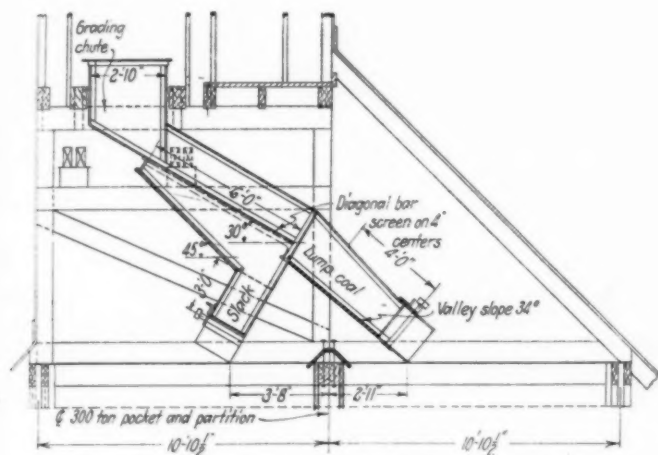
The facsimile reproduced shows the written portion of a freight waybill, Form 50, of the Baltimore & Ohio. This abstract shows a waybill from Chicago (station No. 1733) to St. George Lighterage, N. Y. (Staten Island, New York City) which is station No. 2521. The waybill is No. 750, dated February 24. The last line, at the bottom, contains the number given to the bill at St. George and the date on which the bill arrived. The notation in the upper left corner shows the hour at which this transcript was made.



A Railway Bridge in Colombia

New Coaling Station Has Car Loading Facilities

PROVISION for grading the coal and a ground storage arrangement which permits of reloading into cars for shipment as well as into the bins for immediate delivery to locomotives, are features of a new locomotive coaling station and sanding plant built by the



A Sketch of the Coal Screening Layout

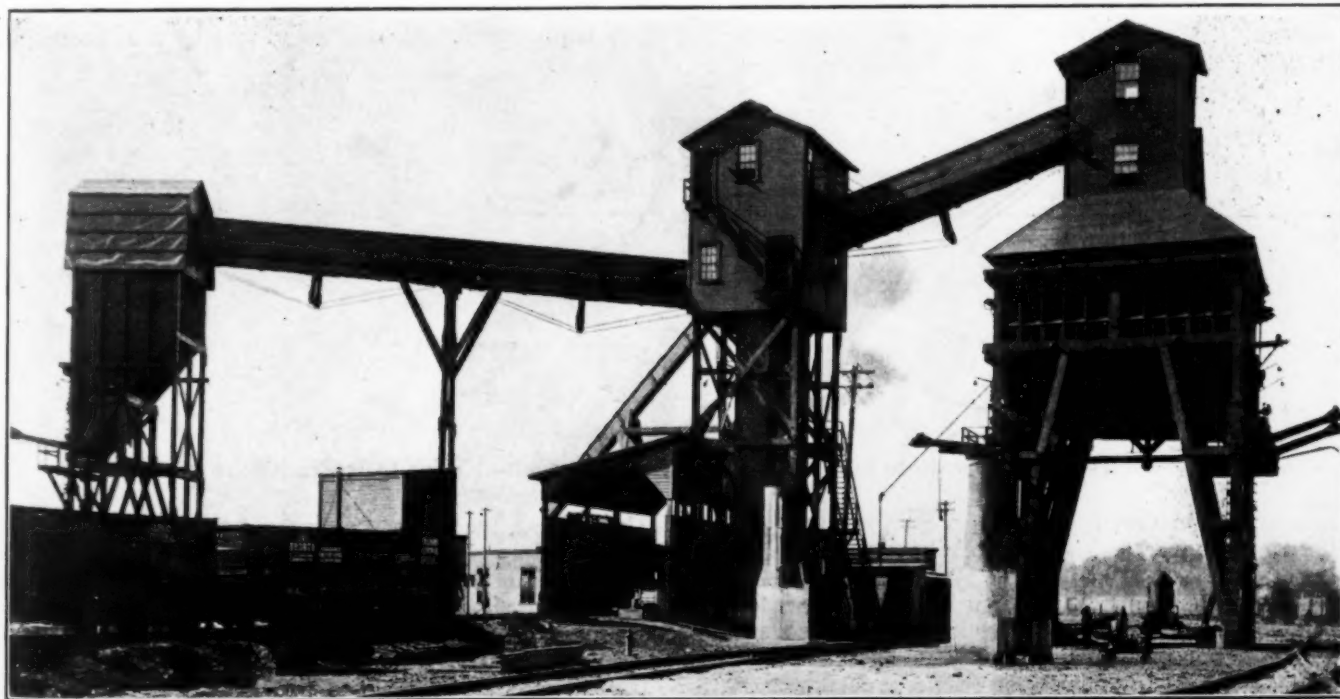
Illinois Central, at Dubuque, Ia., which, in view of the conservatism of the total investment, makes the installation as novel from an engineering standpoint as it is in appearance. In contrast with the usual practice, this plant

system. The ground storage area lies between this hoisting system and the main line chute.

The problem which led to the building of this type of plant was principally one of replacing an old incline chute with a facility of greater capacity which would handle coal with less expense. It was desired at the same time to provide coaling service for the main line without the necessity of altering the position of existing tracks, also to provide a plant which could be dismantled or even abandoned without too great expense if the possible future relocation of yard facilities should be carried out. In addition, the situation at Dubuque advised the establishment of such facilities for storing coal as would constitute a protection not only of the terminal but of other points on the division as well from temporary shutdowns at the mines or similar trouble. To meet these conditions in part the plant is constructed of timber throughout, except, of course, for the footings for the columns and the track hopper, which are built of concrete.

In this plant the coal is received on a stub track which rises from one end on a slight incline to the track hopper. There is room for eight loaded cars on the upper or stub end, and eight empty cars on the approach end. With the aid of an electric car puller, each loaded car is spotted in its turn over the track hopper, dumped, and then let down the incline on the other side, ready to be switched out at the convenience of the switching crew. This arrangement is equally efficient where empties are being loaded from the ground storage for shipment elsewhere.

All coal for either the pockets or for storage is dumped into the track hopper below the receiving track. A 27-in. double-plate feeder rations this coal out to a scraper conveyor whereupon it is discharged either into a 30-in. by 30-in. coal crusher or, if it is not desired to crush the



A Side View of the Coaling Station at Dubuque, Iowa

is virtually a combination of three separate structures, an elevated coal bin of 300 tons capacity situated between and serving two enginehouse leads, a second elevated bin of 50 tons capacity situated alongside and serving a main line track about 200 ft. distant from the first structure, and between these a separate structure containing the hoisting

coal, directly into the elevating system, which is erected at one side of the track. This elevator is composed of 20-in. by 36-in. V-shaped buckets attached to a roller chain and handles coal at the rate of 75 tons per hour. At the top of the elevator house the coal is delivered three ways as desired, first, on a 30-in. belt conveyor to the

50-ton coaling station which is built alongside the main track; second, on a 30-in. belt conveyor to the 300-ton coaling station serving the enginehouse leads and the main freight lead, and, third, to the ground storage area by means of an inclined chute which extends out over the track hopper. This chute, in turn, serves a secondary chute which extends downward through the shed over the track hopper and by which coal from the ground storage can be reloaded into cars when so desired.

Reference has already been made to the fact that the large coaling station serves two tracks leading to the enginehouse. This 300-ton capacity overhead bin is divided into four compartments by means of timber partitions and is designed to separate all coal entering the bins into two grades, lump for hand fired engines, and slack for stoker fired engines, this grading being accomplished by the installation of bar screens situated below the end of the belt conveyor. The slack coal is discharged to either of two compartments by means of a gate in the chute, while the lump coal also is discharged to either of two compartments by means of a gate in the chute. This arrangement, together with the crushing machinery installed below the track hopper, adapts the coal chute for receiving mine run coal; it also permits hand and stoker fired engines to receive coal on both tracks and facilitates the cleaning of each individual compartment.

The storage space is about 175 ft. wide and 350 ft. long which is sufficient area for the storage of 10,000 tons of coal. This lump or run of mine coal is distributed by means of a drag scraper fastened to an endless cable and running over sheaves which are fixed to steel posts placed at intervals around the perimeter of the area. The scraper is moved at a speed of 250 ft. per min. when loaded and at a speed of 320 ft. per min. when empty by means of a hoist installed at a point near the coal elevating house where the operator has an unobstructed view of the entire storage area. The coal is gathered up by reversing the

iron plate, and a 25 gal. per min. electric-driven bilge pump has been provided to keep the bucket pit free from water. The sanding facilities comprise a steam-drying sand house of brick construction and an overhead steel saddleback sand tank of 15 cu. yd. dry sand capacity. The sand is elevated by compressed air.

It is reported that the expense of coaling the locomotives is about one-half that met in operating the old chute, while the cost of handling coal in and out of storage is estimated at three cents per ton. The plant was designed and constructed by the Railroad Water & Coal Handling Company, Chicago, under the supervision of F. L. Thompson, vice-president, and until recently chief engineer, and F. R. Judd, engineer of buildings of the Illinois Central.

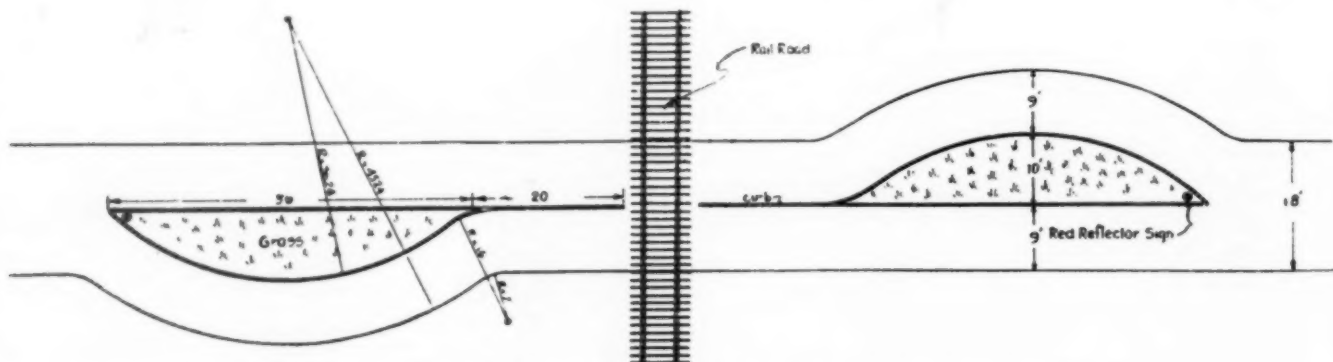
The Cottondale Crossing

THE speed-limiting arrangement which is in use on the highway at a grade crossing in Cottondale, Fla., on the Atlanta & St. Andrews Bay, and which was described in the *Railway Age* of April 11, page 928, was installed at a cost of \$365.50, as appears from the following statement from the Florida State Road Department:

COST OF INSTALLING SAFETY GRADE CROSSING

Item	Cost
250 lin. ft. curb and gutter, at .60 per lin. ft.	\$150.00
180 lin. ft. Hi-way guard rail (fence), at .50 per lin. ft.	90.00
65 sq. yd. sod, at .30 per sq. yd.	19.50
2 Red reflectors, installed	66.00
100 cu. yd. extra excavation, at .40	40.00
Total	\$365.50

This crossing is in State Road No. 1, Jackson county. The improvement described was made by the State Road



Highway Approaches to Railroad Crossing at Cottondale—Florida State Road No. 1

scraper and cable rigging and discharging the coal into the track hopper through a specially constructed opening in the side.

The scraper conveyor and crusher, elevating machinery belt, conveyors and drag scraper hoist each have a separate motor which promotes flexibility in operation and also avoids the consumption of power except for operating the machinery needed at the time. A 15-hp. motor is installed for operating the bucket elevator, while a 75 hp. motor is used for the storage area. This machinery, including the car puller and the scraper hoist, has been designed for operation by unskilled labor and is automatic. The only building not readily accessible to the operator is the coal pocket for the main line, but in this case the motor for the belt conveyor is started and stopped by a remote push-button control. Both overhead storage bins are lined with

Department, the railroad company bearing no part of the cost.

The plan shows the red reflector, surmounted by the "R R" sign, to be 18 in. wide, and the height from the ground to the top of the sign is four feet.

THE ATCHISON, TOPEKA & SANTA FE has reached an agreement with the Los Angeles (Cal.) city council, under the terms of which the railroad will enter the Los Angeles harbor district over the projected municipal belt line. As reported in the *Railway Age* of March 21, a controversy arose when the city failed to construct the belt line around the harbor district with which the Santa Fe's branch line to the harbor was intended to connect. The Santa Fe branch has been unused for over a year pending the settlement of the dispute.

New Catenary Construction on the Canadian National

Specially developed structural supports and steel cored aluminum messenger wire mark the latest step in electrification.

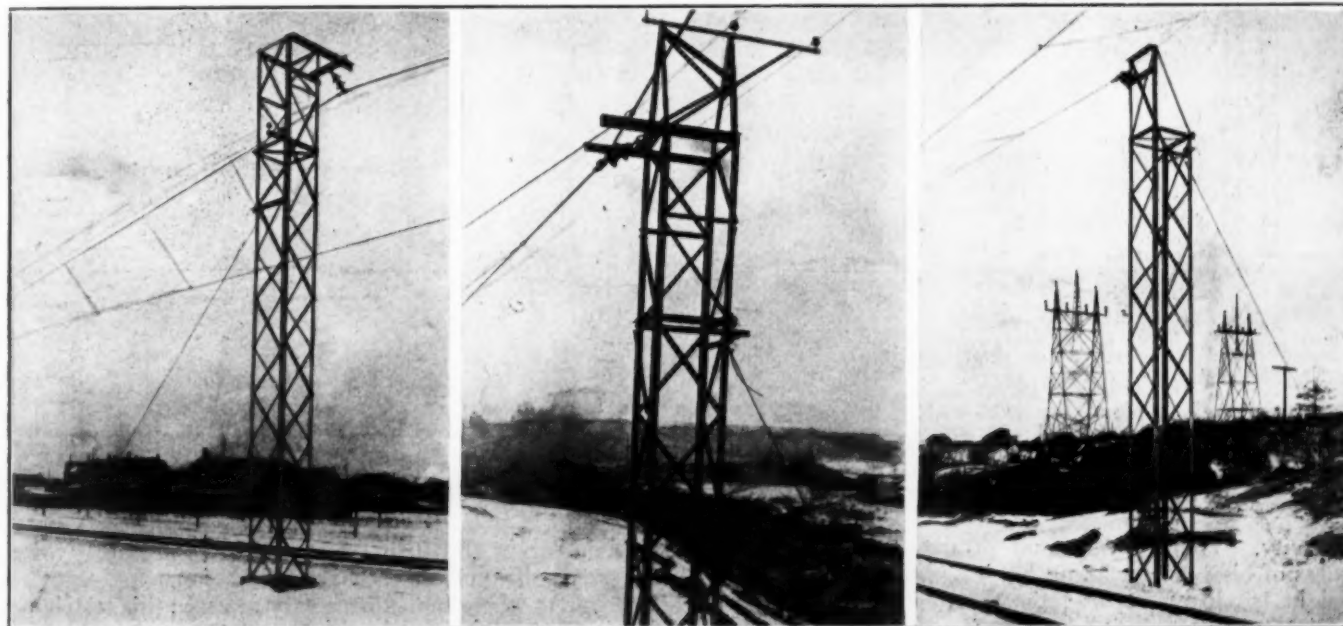
By E. B. Walker

Electrical Engineer, Canadian National Railways

THE Canadian National Railways have included in their system a number of electrified sections of 600, 1,500 and 2,400 volts, direct current and 3,300 volts alternative current, single phase. These vary from local street car lines and interurban lines to main line electrification. Extensions are made from time to time and new sections considered for electrification and with this in view it is felt that an effort should be made to standardize some type of overhead construction which

full economy of steel construction. The shorter spacing with light poles did not allow any economy in comparison with wood construction, and where the longer spacing was used most of the structures were very much stronger than necessary for the actual stresses to which they were subjected, and the cost of this construction was unduly great, except where there were a number of tracks to be electrified.

The new construction under consideration had to be



Pole with Adjustable Head

Adjustable Head and High Tension Extension

Armless Pole on 4 Degree Curve

would, in some measure, include the advantages of permanent steel construction and the low cost of wood poles. This construction had also to be suitable for any of the above voltages and for pantograph or trolley wheel operation.

A review of existing systems, with a personal inspection of the more important examples, was made. It was felt that they could be roughly divided into three classes:

1. Wood pole construction with 150 ft. spacing.
2. Light steel poles with 150 ft. to 180 ft. spacing.
3. Steel bridges and heavy steel poles with 300 ft. spacing.

After investigating these systems it was felt that with the exception of 150 ft. spacing on wood poles, none of the others showed very much effort to make use of the

designed for single track operation and for a total conductivity of 500,000 c.m. of copper. At the same time, it had to be clearly shown that the capital cost was not sufficiently above the cost of wood pole construction materially to increase the total cost of the electrification. Accordingly, a study was made of the different materials and fittings available, which resulted in the adoption of the following:

Trolley Wire

The present portion of the line has been operating for 7 years without renewing the trolley wire which consists of 4/0 hard drawn copper. The various special bronzes were considered, but it was felt that the increase of total weight of the overhead construction caused by the reduced conductivity of the bronze, together with the in-

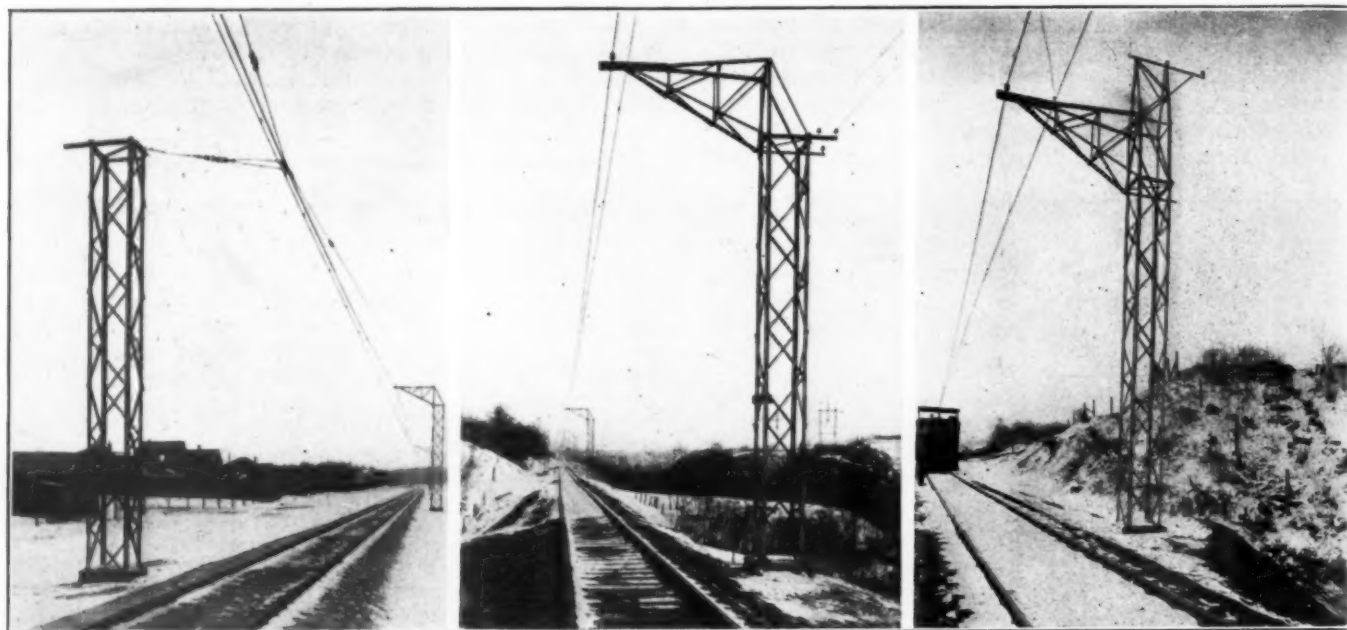
creased cost, formed a distinct drawback especially in view of the excellent service already obtained, and, consequently, it was decided to adopt 4/0 standard grooved section hard drawn copper trolley.

Messenger and Feeder

In order to balance in some part the increased cost of steel or concrete poles as compared with wood poles, it was felt that the longest spacing compatible with safe construction should be adopted. Investigation of existing systems showed a maximum spacing of 300 feet, using very substantial steel construction. There did not seem to be any logical reason, however, for stopping at 300 ft. and an effort was made to balance what we considered a maximum sag of 6 ft. with reasonable messenger tensions.

Another consideration of the long spacing was the necessity for providing feeders of more tensile strength than ordinary copper, and, at the same time, of high con-

ductivity. The natural result of the combined requirements of high tensile strength, high conductivity and light weight led to an investigation of the various composite cables and to the final adoption of steel cored aluminum.



Standard Anchorage for
Different Heads

Standard Tangent
Construction

Showing High Tension
Extension

ductivity. The natural result of the combined requirements of high tensile strength, high conductivity and light weight led to an investigation of the various composite cables and to the final adoption of steel cored aluminum.

As we required a feeder conductivity equal to about 300,000 c.m. of copper, we had to have a cross-section equal to 477,000 c.m. aluminum. We, therefore, had specially made a cable consisting of a 7-strand steel core and two layers amounting to 30 strands of aluminum, each strand being .1261 inch in diameter. High tensile strength steel was used, giving an elastic limit of 16,600 lb., and an ultimate strength of 22,600 lb. and a total weight of 3,944 lb. per mile. As this weighed less than an equivalent of copper cable, it was felt that we could make our spacing longer than usual, as the very light weight of the overhead system would keep the sag at a low point. After a careful investigation it was finally decided that a normal spacing of 330 ft. on tangent track be adopted, with a maximum sag of 6 ft. at normal temperature, and with a normal messenger tension of 3,600 lb.

While the unusual length of this span may be questioned, on the other hand, the low weight of the overhead system must be borne in mind, the result being that the

wire similar to the Bell Telephone River Crossing wire was used with perfect satisfaction.

At points where it was necessary to carry this telephone circuit across the catenary system to poles on the other side, the high tension extension was used. This extension was really developed for carrying high tension wires but it formed a very convenient method of carrying over the telephone circuit. The two outside pins were used for the telephone insulators and a long inside pin was mounted without insulator to prevent a telephone wire from slipping off the arm and falling on the catenary system in case it should become loosened from the insulator.

Poles

The stresses calculated for ice and wind loading showed that a pole of considerable strength would be required, and a number of types were investigated, including various forms of concrete, "H" sections, fabricated poles, both triangular and four-sided. It was finally decided to adopt a pole built up of hot galvanized angles in the shape of a square tower with parallel sides. This type of pole lends itself to catenary construction where inclined

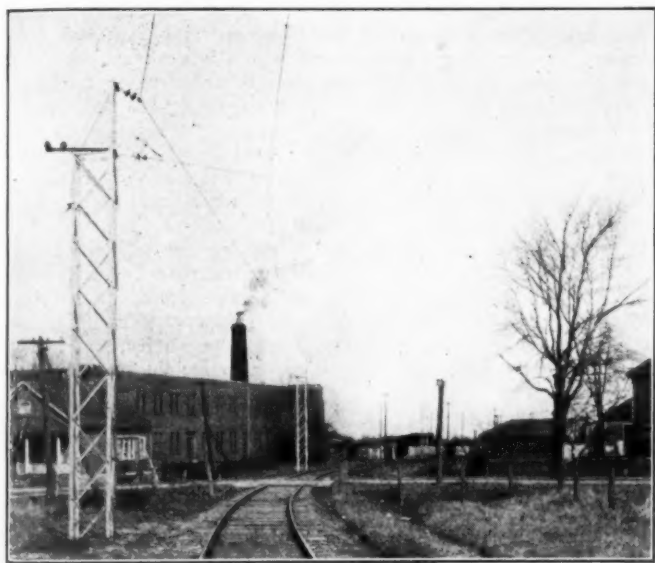
Telephone Dispatching Wire

Where only a small number of telephone circuits are required a short steel arm was provided by extending one of the angles of the tower so that the telephone circuit could easily be carried at the rear of the pole. A special type of telephone wire was necessary because of the long span and two types were adopted for different conditions. Where conductivity was of importance a steel cored aluminum cable consisting of one high tensile strength steel wire .1052 in. in diameter and six strands of aluminum of the same size was used. In other cases where the telephone traffic was light a No. 8 B.W.G. special steel

hangers are used. It is easy to design all the special fittings required for different types of curves, and in the end we were able to obtain an excellent range of adjustment by the use of a standard pole and different heads. The pole was 2 ft. 6 in. square on the base and up to a height of 24 ft. above the rail was the same for all conditions. On this standard shaft, however, could be fastened the following combinations:

1. The standard arm for tangent construction.
2. The short arm for curves up to 1 degree.
3. The adjustable head for suspension of the messenger on curves up to 2 degrees.
4. The armless pole with adjustable fittings on the face of the pole for curves of 3 degrees to 5 degrees.
5. An extension for carrying three high tension wires when necessary.
6. A short pole used for anchorage.

The illustrations will show clearly how these combinations were worked out and we feel that it would have



Armless Pole on a 3 Degree Curve on the Niagara, St. Catharines & Toronto

been difficult to have managed them so simply with any other type of pole, especially in view of the specifications for maximum loading.

The calculations for maximum ice and wind loading show that the pole should have the following capacities: 1,000 pounds vertically at the end of the catenary arm over the center of track, plus 1,000 pounds horizontally at the same point in a direction normal to and towards the track.

We also felt that a reasonable amount of rigidity should be allowed in a direction parallel with the track at the end of the catenary arm and the pole was designed to stand 1,000 pounds in this direction. Actual tests of a sample pole showed that these figures could be practically doubled before failure, thus maintaining our original safety factor of two-to-one.

Insulation

Owing to the loss of insulation due to the use of steel instead of wood poles, it was felt that a higher grade of insulators would be required. A two piece pin type insulator of substantial design was investigated for the catenary arm, but it was eventually decided to use a 5 in. x 5 in. x 4 ft. impregnated oak block set into the end of the catenary arm through which a hole was bored for the insulator pin and ordinary single piece insulators were

used. The oak block in itself gave ample insulation for 1,500 volts, and at the same time made it impossible for the messenger to touch metal work of the arm, even if it were broken entirely free from the insulator.

On curves of 1 deg. 40 min. and over a suspension type of insulator was used consisting of two standard units, each of which had ample insulation for the line voltage.

The various types of catenary hangers used in existing installations were investigated and it was felt that most of them were unnecessarily heavy for the strains actually produced. An effort, therefore, was made to design special hangers of light weight, with a result that a tangent hanger with a $\frac{1}{4}$ in. single rod and a malleable casting was used and the hangers on curves were reduced from the usual $\frac{1}{2}$ in. rod to $\frac{3}{8}$ in. by butt welding a $\frac{1}{2}$ in. piece for the threaded end.

As the lines in question are operated electrically or with very light steam service, it was not thought necessary to use non-ferrous metals, consequently, all fittings were made of steel or malleable iron hot galvanized. Owing to the fact that aluminum is very soft and easily abraded, all insulator points were well wrapped with aluminum tape both tied and clamped into position. It was also felt that wear might be expected from the movement of the catenary hangers on the messenger; consequently, a special aluminum stamping was designed with projecting lugs, which could be clamped on the messenger, allowing the hanger to ride easily over it and at the same time preventing displacement of the hanger by projecting lugs.

The results are very pleasing to the eye. The long distances between poles and the absence of pull-offs and special curve fittings is in marked contrast to the older construction where the spacing is 150 ft. on tangent down to 75 ft. on curves. The inclined type of construction allows the following spacing:

Tangent—	330 ft.
Curves up to 2 degrees—	330 ft.
Curves up to 3 degrees—	285 ft.
Curves up to 4 degrees—	240 ft.
Curves up to 5 degrees—	210 ft.

The latter is the highest curvature in the new construction and no design has been made for anything greater.

The first section of this class of construction was installed on a two-mile extension of the Canadian National Electric Railways, Toronto suburban division, and the majority of the illustrations are taken from this section. This line is operated at 1,500 volts, direct current.

Shortly after six miles were installed on a branch steam line between Port Dalhousie and Merritton, which has been taken over by the Niagara, St. Catharines and Toronto Railway and will be operated at 600 volts, direct current.

Since this orders have been placed for the necessary material to extend the electrification of the Montreal tunnel from the present terminal at Lazard to St. Eustache, a distance of 10 miles. This will be operated at 2,400 volts with multiple unit cars. This section is part of the main line of the old Canadian Northern between Montreal and Ottawa.

While nearly every point in connection with this construction had to be specially developed, the result has worked out in an entirely satisfactory way from the point of view of appearance and strength, and, at the same time, the cost has not exceeded high-class wood pole construction by more than 10 per cent.

In preparing the plans for this work the assistance of the engineering staffs of the Northern Aluminum Company, the Ohio Brass Company and the Canadian Bridge Company was of the utmost importance, both in the general design and in working out the details of the different parts of apparatus.

General News Department

The Interstate Commerce Commission has granted a petition of the Chicago & Northwestern for exemption from equipping with automatic train control devices the locomotives of its Sioux City division operating between Maple River junction and Carroll, Ia., 3½ miles.

The Sesqui-Centennial celebration proposed to be held in Philadelphia in 1926, the 150th anniversary of the signing of the Declaration of Independence, is the subject of a pamphlet which has been issued by the Pennsylvania Railroad giving some scraps of history of the progress of that company's lines, since 1835, and assuring the citizens of Philadelphia, and the American people generally, that the railroad company aims to cooperate in the proposed celebration. A committee of officers has been appointed to act, in this matter, on behalf of the railroad consisting of J. O. Hackenberg, superintendent of the Philadelphia Terminal division; Oliver T. Boyd, general passenger agent of the Eastern region, and Guy S. McCabe, general freight agent of the Eastern region.

Cost of Group Life Insurance Reduced

A reduction in the rate to the employees of the Southern Pacific under the group life insurance plan, from 70 cents a month for each \$1,000 of insurance, to 60 cents, has been made following the completion of the study of the first year's results. Death and disability claims of more than \$1,000,000 were paid during the year 1924, the first in which the plan was in operation.

New Equipment

Class I railroads during the first three months this year placed in service 44,163 freight cars, according to reports filed with the Car Service Division of the American Railway Association, an increase of 6,511 cars over the corresponding period last year. Box cars numbered 22,665; coal cars 15,995, and refrigerators 2,384.

Freight cars on order on April 1 this year totaled 46,126, a decrease of 23,172 from 1924. Of these, the box cars totaled 24,434; coal cars 16,482, and refrigerators 1,933.

Locomotives placed in service during the first three months in 1925 numbered 430, a decrease of 231. Locomotives on order on April 1, 1925, totaled 315 compared with 520.

All of these figures include new, rebuilt and leased equipment.

New York Railroad Club Meeting

The May meeting of the New York Railroad Club on Friday, the 15th, will be the last one of the present season and will incorporate some rather unusual features. The place of the meeting has been changed from the Engineering Societies building to the main ballroom of the Biltmore Hotel. R. E. Woodruff, superintendent of the Erie at Buffalo, N. Y., will address the club on "Lubricating a Railroad Organization."

The Car Service Department Glee Club of the Pennsylvania Railroad at Philadelphia will sing. This club has an enviable reputation and has only recently completed a week's engagement at one of the prominent theatres in Philadelphia. Part or all of the glee club program will be broadcast.

Cost of Fuel in February

During the first two months of this year the railroads saved over \$10,000,000 in the cost of fuel as compared with the cost for the corresponding period of last year, according to the monthly statement compiled by the Interstate Commerce Commission showing the amount and cost of fuel for road locomotives charged to operating expenses for Class I roads. In February the roads consumed 8,008,539 tons of coal, at an average cost of \$2.81 a ton, or a total of \$22,501,412, as compared with 9,040,988 tons,

at an average of \$3.23, or a total of \$29,211,211 in February, 1924. They also consumed 158,816,037 gallons of fuel oil, at an average cost of 3.11 cents a gallon, or a total of \$4,937,753, as compared with 168,346,567 gallons at an average of 2.63 cents or a total of \$4,429,511 last February. For the two months the total cost of fuel was \$58,684,026, as compared with \$68,895,828 last year. This represented less consumption and a lower price for coal and a less consumption but a higher price for oil. The average prices of coal for the two months ranged from \$1.83 for the Pocahontas region to \$4.82 for the New England region. The average for the two months for all roads was the same as in February, \$2.81.

Discussion of New Arbitration Law

The arbitration law passed by Congress and approved last February by President Coolidge and which is designed, like the existing statutes in New York and some other states, to facilitate the settlement of disputes outside of the courts, was the subject of a conference in New York, on April 29, by the Joint Transportation Committee of the Arbitration Society of America. Moses H. Grossman, president of the arbitration society, reported that the arbitration law of New York was proving of great advantage to large numbers of business men.

The conference was participated in by representatives of the legal departments of the New York Central, the Pennsylvania, the Santa Fe, the American Railway Express Company, several steamship lines and a number of large shippers. The principal questions discussed were those relating to the application of this law to claims for loss and damage of or to freight.

The C. N. R. in March

Operating results of the Canadian National Railways for the month of March this year show a decrease of \$2,435,675, or 11.78 per cent, in gross earnings, as compared with the same month last year. Operating expenses in March this year were reduced by \$1,778,332, or 9.68 per cent, from the same month last year, leaving a net decrease in net earnings of \$657,343, or 28.67 per cent, as compared with March last year.

The figures giving the results of operations for the first three months of 1925, show that there was a decrease in gross revenues of \$15,346,174, or 9.42 per cent, but that operating expenses during the same period were reduced by \$5,310,982, or 9.79 per cent. Net earnings for the first three months of 1925, as compared with the corresponding period of last year, show a decrease of \$35,192, or 1.38 per cent.

Gross earnings, operating expenses and net earnings for the month of March and for the three months' period in both years, are as follows:

	March—	1925	1924	Dec.
Gross		\$18,233,944	\$20,669,619	\$2,435,675
Operating expense		16,598,221	18,376,553	1,778,332
Net		1,635,723	2,293,066	657,343
Three months—				
Gross		51,436,454	56,782,628	5,346,174
Operating expense		48,916,204	54,227,186	5,310,982
Net		2,520,250	2,555,442	35,192

Safety Section Meets at Chicago

The Safety Section of the American Railway Association held its fifth annual meeting at the Hotel Morrison, Chicago, on Tuesday, Wednesday and Thursday of this week, with an attendance of about 200. Committee reports were presented showing marked decreases in the totals of accidents, fatal and non-fatal, on the railroads of the country in 1924 as compared with 1923. These statistics, taken from the reports issued by the Interstate Commerce Commission, were summarized in the *Railway Age* of April 4, page 895.

Among the innovations at this meeting was an address by Mrs. Carl R. Gray, of Omaha, Neb., on the spiritual side of safety.

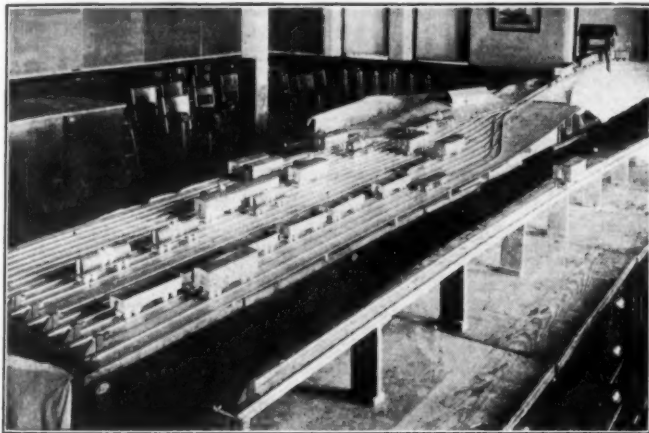
Others addressing the meeting were E. P. Morrow of the United States Labor Board; R. H. Aishton, president of the American Railway Association, and W. J. Patterson, assistant director of the Bureau of Safety, I. C. C.

The committee on statistics, T. H. Carrow, chairman, presented a report urging the setting of a higher goal to be reached by safety committees during the ensuing year. This committee offered a program naming a specific subject to be emphasized in safety work each month of the ensuing twelve months, beginning with May.

The section elected for the ensuing year the following officers: Chairman, Robert Scott (A. C. L.); vice-chairman, T. H. Carrow (Penn.); second vice-chairman, L. F. Shedd (C. R. I. & P.).

University of Kansas Engineering Students Construct Working Model of Hump Yard

A working model of a hump classification yard, constructed by students in the railway course in civil engineering, was displayed at the annual engineers' exhibit held in the engineering school of the University of Kansas recently. The track and equipment were constructed entirely by the students, including the molding of the wheels and the attachment of trucks to car bodies. Freight car bodies were 12 in. long, 3 in. wide and 3¼ in. high. The track was made with 2½-in. gage and spaced 5 in. centers, the rails



Model Hump Yard Constructed by Kansas Engineering Students

being ¼-in. strips of wood tacked to a compo board base. Switches were of the form of the ordinary switch, switch points and frogs being of oak and the remainder of track material of light pine. Switches were thrown by an operator by means of a set of levers. In the two days this exhibit was in operation it was visited by about 5,000 people.

Pennsylvania Rules for Movement of Track Cars

The Pennsylvania's rule (No. 80) in the train-rule book for the operation of track cars consists of ten paragraphs, as below. A track car is defined in the book as a self-propelled car or truck which may be lifted off from or on to the track by the men in charge.

"They will be numbered for identification and designated as Track Car Extra —."

"They will be in charge of a qualified employee and, except as hereby provided, all rules and special instructions governing the movement of trains will apply to the movement of track cars."

"They must not be used in automatic block system territory unless special provision is made for manual block protection. Attention is called to the fact that track cars will not operate automatic signals."

"They will not be authorized to represent or run as a section of a schedule; and under manual block system rules will be operated as a 'train other than a passenger train.'"

"All movements will be made without displaying the signals prescribed by Rules 19 and 21."

"When night signals, as prescribed by Rule 9, are required, a white light must be displayed to the front and rear of track cars."

"They may be equipped with a portable telephone, in connection with the use of which they may be removed from and replaced on the main track at any point within a block by complying with block system rules."

"Lookout must be maintained in both directions."

"When track cars are approaching road crossings at grade, the trackman's whistle must be sounded before reaching the crossing, and the track cars must approach all such crossings prepared to stop."

"They must not be attached to trains in motion, nor follow trains or other track cars closer than 500 feet."

Railway Development Association

The American Railway Development Association will hold its 17th annual meeting at St. Anthony Hotel, San Antonio, Tex., on Wednesday, Thursday and Friday, May 13, 14 and 15. There will be general meetings in the forenoon of each day, and the afternoons will be taken up with section meetings, except that for Friday afternoon no program has been issued. Following are the principal topics and speakers:

Wednesday Forenoon

Reports by secretary A. L. Moorshead (Erie) and president J. F. Jackson (C. Ga.); Paper by Dr. W. B. Bizzell.

Thursday Forenoon

From 9:30 to 10:15 "Brag Meeting" and a similar exercise on Friday, the two together being intended to give opportunity for each member to speak for a minute and a half on the line suggested by the title.

At 10:15, address by J. W. Carpenter, Texas Power & Light Company; 11 to 11:30 results of development work; papers by G. E. Bates (D. & H.); W. L. English (St. L. S. W.); W. L. Huggins, Jr. (St. L.-S. F.) and C. L. Seagraves, (A. T. & S. F.). At 11:30, address on vocational training schools, by Dr. Robert D. Maltby.

Friday Forenoon

From 10:15 to 10:45, Public relations; Z. G. Hopkins, (M-K-T.), W. H. Hill, (N. Y. C.); from 10:45 to 11, farmers' organizations; W. A. Wurzbach. At 11:15, address by Dr. W. M. W. Splawn, president of Texas State University.

Section Meetings

Wednesday Afternoon

Agriculture, Colonization, and Marketing; agriculture is allowed 1 hour, 30 minutes, and the other subjects one hour each. On agriculture the speakers will be J. D. Tinsley (A. T. & S. F.); A. W. Large (C. R. I. & P.); J. C. Pridmore, (A. & L. M.) and O. C. Haworth, (S. A. & A. P.).

On colonization the speakers will be V. Kuska (C. B. & Q.) and C. L. Seagraves, (A. T. & S. F.). On marketing, E. H. McReynolds (M. P.), H. L. Ford, (C. B. & Q.), J. F. Newsom (K. C. S.) and L. D. Fuller (Erie).

Simultaneously with the foregoing there will be section meetings of industrial department representatives and on public relations, each beginning at 1:30. The industrial meetings will have papers by William Pugh (B. R. & C. W. Lane (A. T. & S. F.)). On public relations the speakers will be J. F. Jarrell (A. T. & S. F.), Daniel R. Willard (G. N.) and J. D. McCartney (C. Ga.).

Thursday Afternoon

Section meetings on public relations, and on agriculture, each begin at 1:30. On public relations the speakers will be E. H. Reynolds, W. H. Hill, H. B. Fullerton (Long Island), N. D. Zuber, E. D. Mays, (S. A. L.) and C. W. Lane (A. T. & S. F.). On agriculture the speakers will be R. G. East (Penn.), O. K. Quivey (B. & O.), H. J. Schwieter (I. C.), W. B. Cook (I-G-N), Dr. W. S. Myers and M. B. Oates (F. W. & D. C.).

Thornton Gives Opinion on Rate Reductions

As Increases of Net Revenue

At another meeting of the House Committee on National Railways and Shipping at Ottawa last week there was a debate on the question of reduction of freight rates when Sir Henry Thornton, president of the Canadian National, spoke his mind on the effect of any further freight rate cut. Asked by D. A. MacKinnon, Prince Edward Island, if a rate reduction would not increase gross earnings by attracting more business Sir Henry replied, "Not by several jugfuls."

Another aspect of the freight rate situation was presented when C. W. Stewart asked J. E. Dalrymple, vice-president of the C. N. R., as to the extra amount of revenue the Canadian National was receiving from the application of the discriminatory Crows Nest rates in the West.

Mr. Dalrymple answered by stating that he had estimated pretty closely that "a full restoration of the Crows Nest rates as prior to the order of the Privy Council on December 25 last would mean a loss of net revenue to the Canadian National Railways of \$750,000 per annum, based on the 1923 traffic."

Dealing with the general question of the freight operating revenues of the Canadian National in 1924, which were \$171,045,297, as compared with \$185,240,896 the previous year, Sir Henry Thornton said the decrease was in the main attributable to the general depression in business last year. Especially, the depression in the automobile industry in Michigan hit the Canadian National hard. "We do a purely American freight business, too,"

said Sir Henry. "That is, we get a lot of freight out of Chicago for delivery in New England. This is very lucrative and very heavy, especially when there is a congestion on the American trunk lines east of Chicago. That was hard hit last season."

A decrease of about \$2,000,000 in the passenger operating revenues was attributed by Mr. Dalrymple to the increased competition of motor cars and buses. In self-protection the Canadian railways would have to take some drastic steps. "The motor buses," said Mr. Dalrymple, "should pay for the use of the highways and help pay for their maintenance."

B. & O. Co-operative Plan to Give Shopmen an Extra Month's Work in 1925

Shop employees of the Baltimore & Ohio have earned for themselves about a month's extra work in 1925, according to Vice-president Galloway, as reported in the Baltimore & Ohio Magazine. The plan of co-operation with employees in the shops stipulates that in return for additional endeavor by the employees, the management undertakes to see to it that they are adequately rewarded. This they are trying to do, in the first place, by providing more stable employment. In 1924 heavy improvement work on cars and locomotives, ordinarily not done in the company's own shops, was diverted to them for this purpose. The labor cost on this extra work totaled \$347,303. This was not sufficient to provide a full year of 48-hour-week work, but it ameliorated conditions considerably and now, for 1925, the company is planning to do extra work with a labor cost of \$2,772,316 in its own shops. This sum amounts to about the same as the average monthly labor expense on maintenance of equipment—hence the statement that the employees are to secure an extra month's work by way of recognition of the benefit to the company of their co-operative efforts.

Up to March 4 the company had received 9,277 suggestions for improvements from employees under the co-operative plan—77.8 per cent of which had been put into effect.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

- AIR BRAKE ASSOCIATION.**—F. M. Nellis, 165 Broadway, New York City. Next convention, May 26-29, 1925, Alexandria Hotel, Los Angeles, Calif. Exhibit by Air Brake Appliance Association.
- AIR BRAKE APPLIANCE ASSOCIATION.**—John B. Wright, Westinghouse Air Brake Co. Meeting with Air Brake Association.
- AMERICAN ASSOCIATION OF ENGINEERS.**—C. E. Drayer, 63 E. Adams St., Chicago. Next convention, 1925, Orlando, Fla.
- AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.**—Grant Williams, 1341 Railway Exchange, Chicago.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.**—E. L. Duncan, 332 So. Michigan Ave., Chicago. Annual meeting, June 23, 1925, Portland, Ore.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, June 16-19, 1925, Richmond, Va.
- AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.**—C. H. Shircliffe, Chicago & North Western Ry., Chicago. Annual meeting, October 6, Hotel Statler, St. Louis, Mo.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—J. W. Welsh, 8 W. 40th St., New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.**—C. Borchardt, 202 North Hamilton Ave., Chicago, Ill.
- AMERICAN RAILWAY ASSOCIATION.**—H. J. Forster, 30 Vesey St., New York, N. Y. Next meeting, May 15, 10 a. m., Central time, Blackstone Hotel, Chicago.
- Division I.—Operating.**—J. C. Caviston, 30 Vesey St., New York. Next meeting, May 14, 9:30 a. m., Central time, Blackstone Hotel, Chicago.
- Freight Station Section** (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Next meeting, May 19-21, 1925, Kansas City, Mo.
- Medical and Surgical Section.**—J. C. Caviston, 30 Vesey St., New York. Next meeting, May 26, Atlantic City, N. J.
- Protective Section** (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y. Next meeting, July 8-10, Auditorium Hotel, Chicago.
- Safety Section.**—J. C. Caviston, 30 Vesey St., New York.
- Telegraph and Telephone Section** (including former activities of the Association of Railroad Telegraph Superintendents).—W. A. Fairbanks, 30 Vesey St., New York.
- Division II.—Transportation** (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.
- Division III.—Traffic.**—J. Gottschalk, 143 Liberty St., New York.
- Division IV.—Engineering.**—E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Exhibit by National Railway Appliances Association.
- Construction and Maintenance Section.**—E. H. Fritch.
- Electric Section.**—E. H. Fritch.

- Signal Section** (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Next meeting, Sept. 29 to Oct. 1, West Baden Springs, Ind.
- Division V.—Mechanical** (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Business meeting, June 16-18, 1925. No exhibit in 1925.
- Equipment Painting Section** (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.
- Division VI.—Purchases and Stores** (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual meeting, May 19-21, St. Louis, Mo.
- Division VII.—Freight Claims** (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, May 25-28, 1925, Hotel Muehlebach, Kansas City, Mo.
- Car Service Division.**—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Next convention, October 20-22, 1925, Buffalo, N. Y. Exhibit by Bridge and Building Supply Men's Association.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.**—A. L. Moorshead, Industrial Engineer, Erie R. R., New York, N. Y. Next meeting, May 13-15, 1925, St. Anthony Hotel, San Antonio, Texas.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—(Works in co-operation with the American Railway Association Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliances Association.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.**—(See American Railway Association, Division V.)
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Annual convention, August, 1925, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.**—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.
- AMERICAN SOCIETY FOR STEEL TREATING.**—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio. Annual convention, week of September 14, 1925, Cleveland, Ohio.
- AMERICAN SOCIETY FOR TESTING MATERIALS.**—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 22-26, Chalfonte-Haddon Hall, Atlantic City, N. J.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.**—29 W. 39th St., New York. Regular meetings 1st and 3rd Wednesday in month, except July and August, 33 W. 39th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York. Spring meeting, May 18-21, 1925, Milwaukee. Regional meeting, June 22-25, 1925, Portland, Oregon.
- AMERICAN TRAIN DISPATCHERS' ASSOCIATION.**—C. L. Darling, 10 East Huron St., Chicago, Ill. Biennial convention, July 20, 1925, Chicago.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.**—E. J. Stocking, 111 West Washington St., Chicago. Next convention, January 26-28, 1926, Cleveland, Ohio.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.**—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 17, 1925, Winnipeg, Canada.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Annual meeting, October 20-24, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.**—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.
- ASSOCIATION OF RAILWAY SUPPLY MEN.**—E. E. Thulin, Peoples Gas Bldg., Chicago. Meeting with International Railway General Foremen's Association.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.**—(See American Railway Association, Division I.)
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.**—(See American Railway Association, Division II.)
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—B. J. Wilson, Pocket List of Railroad Officials, 605 Fisher Building, Chicago. Meeting with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.**—C. R. Crook, 129 Chaffron St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.**—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.
- CENTRAL RAILWAY CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.
- CHICAGO CLAIM CONFERENCE, Personal Injury Section.**—F. L. Johnson, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, Sherman Hotel, Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.**—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.
- CINCINNATI RAILROAD CLUB.**—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.
- CLEVELAND STEAM RAILWAY CLUB.**—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.
- EASTERN RAILROAD ASSOCIATION.**—E. N. Bessing, 614 F St., N. W., Washington, D. C. Annual meeting, May 14, 1925, Railroad Club, New York.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next meeting, August 18-20, 1925, Hotel Winton, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILWAY CONGRESS.—Office of Permanent Commission of the Association, 74 rue du Progrès, Brussels, Belgium. General secretary, P. Ghilain. Next session of the Congress, London, June 22-July 6.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Next annual convention, May 26-29, 1925, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha Ave., Winona, Minn. Annual convention, September 8-11, 1925, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—F. S. Wilcoxon, The Edna Brass Manufacturing Company, 460 McCormick Bldg., Chicago, Ill. Meeting with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next convention, May 19-22, 1925, Hotel Sherman, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

MOBILE TRAFFIC & TRANSPORTATION CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m. on 2nd Thursday of each month, Cawthon Vineyard, Mobile, Ala.

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York. Twelfth convention, June 24-26, Seattle, Wash.

NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, 825 South Wabash Ave., Chicago. Annual exhibition at convention of American Railway Engineering Association.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, June 10, 1925, Hotel Traymore, Atlantic City, N. J.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa.

RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1143, Transportation Building, Chicago.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, A. R. A. No exhibit in 1925.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, September 22-24, 1925, Kansas City, Mo. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMENS' INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car, Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Annual meeting, September 15-18, 1925, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 226 West Jackson Boulevard, Room 1001, Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Block, Chicago, Ill.

Traffic News

The National Railways of Mexico have moved their New York office from the Woolworth building to 225 West Thirty-fourth street.

The Newark & Boston Steamship Company has been established to carry freight direct from Newark, N. J., to Bridgeport, Conn., and Boston, Mass., and vice versa.

The Union Pacific has issued an elaborate 48-page booklet containing colored photographs and descriptions of Zion National Park, Bryce Canyon, Cedar Breaks, Kaibab Forest and the northern rim of Grand Canyon.

The Chicago & Eastern Illinois reduced the running time of its day train between Chicago and St. Louis by 1½ hours on April 25. This train, the St. Louis-Chicago Limited, is now operating on a 6½-hour schedule, leaving Chicago at 11:25 a. m. and arriving in St. Louis at 5:55 p. m. Returning it leaves St. Louis at 12:13 p. m. and arrives in Chicago at 6:43 p. m. The action was taken to meet the schedules of 6½ hours which were put into effect by the Wabash, the Illinois Central and the Chicago & Alton in September.

The uniform through export bill of lading has been made the subject of a pamphlet of 43 pages, just issued by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, Washington, to answer the numerous questions which have been received concerning the terms and purpose of this form and the experience of the carriers in its use. The pamphlet is by Julius Klein, director of the Bureau, and is a thorough study of the history of the doings of the government in this field, since the uniform bill was prescribed by the Interstate Commerce Commission, following the enactment of the Transportation Act of 1920. The author does not attempt to reconcile the conflicting views concerning the merits and faults of this form, but aims to present the facts in such detail as to fully explain both sides of all doubtful questions. The President's committee on the co-ordination of rail and steamship activities has recommended the more general use of the uniform through export bill.

Summer Passenger Traffic to Be Heavy

Besides the large number of conventions scheduled to take place during the summer months, increased summer traffic is indicated by the number of inquiries made by the public concerning tourist travel. Roads entering Chicago report 50 per cent more inquiries regarding summer tourist fares this year than a year ago. The Atchison, Topeka & Santa Fe reports that 95 per cent of its inquiries are coming from east of the Mississippi river, indicating that travel, this summer, particularly to the Pacific coast and national parks will be heavy. The Canadian National expects a record traffic for its summer resorts and hotels of western Canada and reports that bookings are already treble those of any previous year at this date.

An unusually large number of important conventions will be held during the summer months, especially on the Pacific coast, which will greatly increase the travel. Among these are the Shriners', the Knights Templars' and the Elks' conventions which alone will require approximately 700 sleeping cars. It is estimated that the Shrine and Elks convention traffic will be 25 per cent heavier than in 1923. The Norse Centennial, to be held at the Twin Cities from June 6 to June 9 will add to traffic as all the railways entering the Twin Cities have provided a special rate of one and one-third fares for the round trip. Another large convention will be that of the realtors, to be held in Detroit.

The establishment of a clearing house for convention dates under the direction of E. L. Bevington of the Trans-Continental Freight Bureau, has proved successful in that the dates for 30 conventions scheduled for 1925 have been scattered so that they will not conflict with each other or with holidays. The clearing house reports that several organizations have already sought advice as to convention dates for 1926.

Another interesting traffic movement will be that for the

derby at Louisville, Ky., which it is predicted will establish a record this year. The Pullman Company has already received applications for 158 cars. The Cuban Special, which the Pullman Company has been operating in Cuba during the winter, has been chartered by the Edgewater Beach Hotel, Chicago, and will be run from Chicago to Louisville for this event.

Another feature which will add to summer travel is the new steamship service of the Canadian National to Alaska, the first sailing of which will be on June 22. This service already has attracted many bookings.

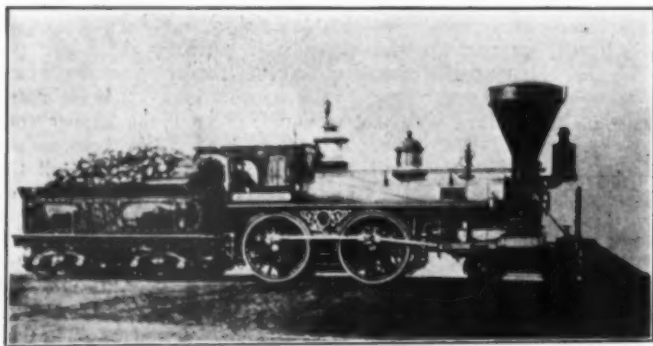
Travel Club Plan Offers Tourist

Tickets on Partial Payments

The Travel Club of America, which has been organized by F. C. Carley, is offering to railways the Travel Club plan under which patrons may purchase round trip tourist tickets on partial payments. The arrangements with the roads are made on a royalty basis, half of which amount is to be used for advertising to stimulate interest in travel and make it easier for people planning vacations or other trips to make the journey with ease. At the present time the "American travel plan" is in use on the Birmingham & Northwestern, the Chicago, Duluth & Georgian Bay Transit Company, the Goodrich Transit Company, the Gulf, Mobile & Northern, the Illinois Central, the Yazoo & Mississippi Valley, the Gulf & Ship Island, the Chicago & Eastern Illinois and the Michigan Transit Company.

By making weekly payments with the agent of any of the above transportation companies the prospective traveler secures certain reductions. The tariffs provide for three classes of savings. The 32-week club, in which deposits are made each week for a period of 32 weeks, gives to the members the right to secure a ticket, upon the completion of payments, at a discount of 10 per cent; the 25-week club, a discount of 7½ per cent; and the 20-week club, 6 per cent. Arrangements provide for the issuance of Travel Club certificates and the purchase of stamps each week to cover the value of round trip tourist tickets, only to destinations on and by way of lines shown as participating carriers in the Travel Club tariff. Partial payments are made through the purchase of Travel Club stamps which are issued in several denominations and are affixed to Travel Club certificates. On the completion of payments, but not before the expiration of 32, 25 or 20 weeks from the date on which the Travel Club certificate was issued, a round-trip tourist ticket will be issued to the holder of the certificate on its surrender. If the holder of a certificate desires to change his destination or in the event that the tourist fare is increased or decreased between the date of issuance of the certificate and the date of sale of the ticket, the new fare is figured according to the plan used, and the difference between the old net fare and the new net fare is collected or refunded at the time the railroad ticket is issued. The plan applies only in connection with round-trip tourist fares published in tariffs which make specific reference to the Travel Club tariff.

Payments on Travel Club certificates may be withdrawn at any time on surrender of the Travel Club certificate with stamps attached by the Travel Club member in person. No interest will be allowed on sums thus withdrawn.



Old Erie Locomotive No. 327, Built by Rogers

Seated in the Cab is H. G. Brooks, for Whom the Locomotive Was Named. He was at the Time S. M. P. of the Erie and Afterward Founded the Brooks Locomotive Works.

Commission and Court News

United States Supreme Court

Jurisdiction of Mortgagee's Suit

to Obtain Removal of Offices

The Supreme Court of the United States, reversing a decree of the federal district court for southern Texas, holds that that court has jurisdiction of a suit by the mortgagee of the property of the International & Great Northern to enjoin the defendants, Anderson County, Texas, and the city of Palestine, who had obtained a decree in the state district court requiring the railroad forever to keep its general offices, shops and roundhouses at Palestine, to which suit the mortgagee had not been made a party from enforcing these claims. The suit was filed as ancillary to and dependent on a suit for the foreclosure of the mortgage.

The Supreme Court holds that "the maintenance of the general offices, shops and roundhouses at Palestine burdens and restricts operation, requires great and unnecessary expenditures and correspondingly diminishes the value of the railroad. If, as asserted by plaintiff the complaints of the defendants [based on alleged contracts by the railroad's predecessors to maintain the shops, etc., at Palestine] are groundless, plaintiff had a right to have the property sold free from such burdens. The controversy has direct relation to the operation, use and value of the railroad property, and must be held to be ancillary to and dependent on the foreclosure suit. The district court had jurisdiction and should have heard and determined the merits."—Central Union Trust Co. of New York v. Anderson County, Texas. Decided April 13, 1925. Opinion by Mr. Justice Butler.

Right to Discontinue Switching

Service on Industrial Siding

The Western & Atlantic, an interstate common carrier, sought to enjoin the enforcement of an order of the Georgia Public Service Commission requiring the railroad to continue to furnish switching service on an industrial siding to a warehouse company whose premises are 1,600 ft. from the railroad's public team tracks. The siding, built many years ago on the railroad's right of way, at present serves only two industrial plants. Application for a temporary injunction was denied by the district court for Northern Georgia, and appeal was taken to the Supreme Court of the United States.

The Supreme Court refuses to sustain the railroad's contention that the requirement of the continuance of the service deprived the company of its property without due process of law, because the service rendered by the sidetrack was much greater in out-of-pocket cost than the compensation. "The service," the court says, "has been rendered for years. It was a voluntary arrangement, and (Sec. 2664, Georgia Code, 1910) was made irrevocable by the Public Service Commission under Rule 14, except by consent of the Commission. The spur track was for a public purpose. The requirement that such a service should not be discontinued without notice and hearing was clearly within the police power of the state. Even if the cost of the switching is more than what is received for it, we can not determine on any showing made by the company that the switching does not work a benefit in the increased business that the company gets or may get by reason of the added facilities furnished by the switching. The fact that the side track may not be profitable by itself can not be held to be a confiscation of property, even if it involves a loss."

The Supreme Court holds that the railroad's contention that since 85 per cent of the business done on the side track is interstate commerce, the power to order its establishment or abandonment is tested in the Interstate Commerce Commission and that the state commission is without authority in the premises, is in the teeth of section 402, par. 22 of the Transportation Act of 1920, which provides that the authority of

the commission conferred by that section over the extension or abandonment of interstate railway lines shall not extend to the construction of spur industrial or side tracks.

The question whether the continuance of the service violated the Interstate Commerce Act as unduly discriminatory is held to be one involving issues not primarily for the courts, but for the Interstate Commerce Commission. "It requires a consideration by experts of the benefit of the use of such a siding as compared with that of other sidings in connection with the rates in interstate commerce to determine whether there is undue discrimination between shippers. The railroad company is therefore in no position to appeal to the courts on this ground until it has invoked the investigation and decision of the Interstate Commerce Commission upon the concrete facts in a proper manner. If and when the Commission shall have made such an investigation and have found the existence of undue discrimination, its order may well not be a specific direction against a continuance of service on a particular siding, but an order upon the company to remove the undue discrimination between interstate shippers, giving discretion to the company to adopt a satisfactory method of meeting the requirement."

The decree of the district court was affirmed.—*Western & Atlantic v. Georgia Public Service Commission*. Decided April 13, 1925. Opinion by Mr. Chief Justice Taft.

Notice of Claim for Damage—Cummins Amendment

A carload of eggs was delivered to the Adams Express Company February 23, 1918, at Louisville, Ky., for transportation to New York, and was delivered there March 4, 1918. Action was brought for damages for loss in market value due to delay. The price of eggs declined between the time the consignor claimed delivery to consignee should have been made (February 24-25) and the time when it was made. Judgment on a directed verdict was affirmed by the New York Appellate Division, 205 App. Div. 332. Leave to appeal to the New York Court of Appeals was denied. The case was brought to the Supreme Court of the United States on certiorari. (263 U. S. 697.)

The case involved the construction of the first Cummins Amendment:

"That if the loss, damage or injury complained of was due to delay or damage while being loaded or unloaded, or damaged in transit by carelessness or negligence, then no notice of claim shall be required as a condition precedent to recovery."

The bill of lading required written claim to be made within four months after delivery. No claim was made within this time. The court had to decide whether the case was one where such notice might be required. The Supreme Court holds that the requirement is valid. The consignor's contention that the word "delay" is to be read with "while being loaded or unloaded" would make two classes of claims excepted from the general rule. "One would include claims for loss due to delay or damage while being loaded or unloaded. The other would include those for damage in transit due to negligence. But it is not apparent why claims for loss due to delay in transit should not be included in the same class as claims for damages due to delay while being loaded or unloaded. And no good reason is shown for the elimination of the element of carelessness or negligence from the definition of one class, while including it in the definition of the other."

The Supreme Court is of opinion that the word "damage" was intended, and that the final "d" in "damaged" may be eliminated; and that the comma after "unloaded" should be omitted; and holds that the clause must be so read that carelessness or negligence is an element in each case of loss, damage or injury included in the clause; and that, in such cases, carriers are not permitted to require notice of claim as a condition precedent to recovery.

No notice of claim having been given and no claim having been filed as required by the express receipt, it was held to be incumbent upon the consignor to show loss, damage or injury due to delay by carelessness or negligence of the company.

There was evidence tending to show that the ordinary time of a passenger train on the Pennsylvania between Louisville and New York was 25 or 26 hours. But there was no evidence that such shipments usually moved or that this shipment could have moved on any train making that time or any to show the time usually made by trains upon which such shipments were or could be moved. There was no evidence to show what was the customary or usual time for the transportation and delivery of such shipments. It is held that the evidence was not sufficient to sustain the finding

of the trial court that such reasonable time was not more than 30 hours. There was evidence of market value of such eggs in New York City on February 25, 26, March 1, 2, and 4, on the last of which dates the eggs were sold. The trial court directed a verdict for the difference between the amount for which they were sold and the price on February 25, with interest. It is held that the date when the eggs should have been delivered to consignee and the market value at that time were essential to the consignor's case. In the absence of either, the amount of the loss, if any, could not be determined. The judgment was therefore reversed.—*Barrett v. Van Pelt*. Decided April 13, 1925. Opinion by Mr. Justice Butler.

Order Reducing Rates on Logs Held Invalid

The intrastate transportation of saw logs in carload lots constitutes a large part of all the intrastate freight traffic in Washington on each of the four transcontinental railroads. In 1918 the Director General made a horizontal increase of freight rates of 25 per cent. In 1920, a further increase of 25 per cent was authorized by the state Public Service Commission. In 1922, the Commission's successor, the Department of Public Works, entered an order establishing a uniform distance tariff for an experimental period of 12 months, greatly reducing the prevailing rates. It was estimated that the revenues of the several carriers from this traffic would be lessened from 15 to 37 per cent, and that additional losses in revenue would result from changes prescribed concerning the minimum carload.

The railroads sued the Department to set aside the order as arbitrary and confiscatory. Decree denying relief was affirmed by the Supreme Court of the state, three judges dissenting, and the case was brought to the Supreme Court of the United States on writ of error.

The log traffic is limited substantially to the section of the state lying west of the Cascade Mountains. The average length of haul on each of the roads is not more than 32 miles. The carriers produced evidence tending to show that the rates did not defray fully the operating costs of the traffic and its proportion of the taxes payable. The Department's findings concerning operating costs rested largely upon deductions from data found in the railroad's published reports and in their exhibits filed in the case. Instead of attempting to show by evidence, reasonably specific and direct, what the actual operating cost of this traffic was to the several carriers, the Department had created, the Supreme Court said, a composite figure representing the weighted average operating cost per 1,000 ton miles of all revenue freight carried on the four systems and made this figure a basis for estimating the operating cost of the log traffic in Washington. This, the court holds, was erroneous, and the error in basing the order on evidence which did not support it being a denial of due process, the judgment of the state court was reversed.

The court said: "A precise issue was the cost on each railroad of transporting logs in carload lots in western Washington. The Department had ignored the differences in the average unit cost on the several systems; and then the differences on each in the cost incident to the different classes of traffic and articles of merchandise; and to the widely varying conditions under which the transportation is conducted. In this unit cost figure no account is taken of the differences in unit cost dependent, among other things, upon differences in the length of haul; in the character of the commodity; in the configuration of the country; in the density of the traffic; in the daily loaded car movements; in the extent of the empty car movement; in the extent to which the equipment is used and in the expenditures required for its maintenance. Main line and branch line freight, interstate and intrastate, car load and l. c. l. are counted alike. The Department's error was fundamental and vitiated its whole process of reasoning."

The cases which applied the principle of awaiting the result of an experimental period for untried rates were held not applicable, since, if the existing rates were confiscatory, as the carriers' evidence, embodying the results of ample experience, tended to show, there could be no reason for awaiting the test of the much lower rates which were prescribed.—*Northern Pacific v. Department of Public Works of Washington*. Decided April 13, 1925. Opinion by Mr. Justice Brandeis.

Foreign Railway News

German Car Industry Overbuilt

The number of railway car manufacturers in Germany has doubled since before the war and there are now more than 100 factories, according to the American Chamber of Commerce in Germany. While the output, therefore, of German factories has considerably increased, markets for railway cars have decreased. The German railways which formerly placed orders with German factories up to 80 per cent of their capacity, have not placed any orders since 1923 and there is no chance for any orders being placed this year. The elimination of this potential customer is felt severely by all concerned and has led to unemployment, besides affecting the iron and steel industry as locomotive and car builders consumed up to 600,000 tons of steel a year.

Railways in foreign countries are favoring their own industries, so that export orders are few and far between and, as a rule, are not very profitable. It is also reported that prospective foreign customers are making excessive demands in the matter of terms and unusual credits are asked.

Swedish Railways Prospering

Increased use of hydro-electric power in Sweden has improved traveling facilities on the railways and brought rising profits and reductions in certain freight and passenger rates, according to a recent official Swedish trade bulletin. Several lines of the Swedish State Railways have been electrified, including a section above the Arctic Circle, which is the world's northernmost electric railway, and by the end of this year the reconstruction of the trunk line between Stockholm and Gothenburg for the use of electric traction will be completed. It is 70 per cent finished now and the stretch between Moholm and Falkoping will be ready for a try-out of the new power in May. As Sweden is well supplied with water power in every part, the transformation of other trunk lines will be taken up after that, and some of the privately-owned lines have also begun plans for similar changes. The new electric locomotives are also being built in Sweden, chiefly in the shops of Nydqvist & Holm, at Trollhaettan.

The net earnings of the Swedish State Railways for 1924 were 30,200,000 kronor, as compared with 24,300,000 for the year before. This year the management expects to be able to turn over to the state budget 500,000 kronor more than for 1924. Last year 39 old steam engines were junked, as well as other rolling stock which had originally cost 2,053,592 kronor. From April 1 the use of round trip tickets at reduced rates was extended from zones of 70 kilometers to 366, with the same privileges to make stop-overs and check baggage as on straight fares. The rates on sleeping cars and for limited express trains have been reduced ranging from 17 to 25 per cent, and the night service over the Trelleborg-Sassnitz route which carries sleeping cars across the Baltic from Sweden to the Continent and vice versa on car ferries without obliging the passengers to leave their berths has been resumed. Freight rates on certain bulky goods have also been cut this spring from 10 to 20 per cent.

Miscellaneous Notes

The following reports have been received by the Transportation division of the Bureau of Foreign and Domestic Commerce:

Tenders for fittings for car construction for the Royal State Railways of Siam are being called for and will be received up to 2 o'clock on June 29 at the office of the Commissioner General of the Royal State Railways, Bangkok. Copy of the tender forms, specifications, general conditions, and blue prints of the material desired may be borrowed from the Transportation Division upon request.

Tenders for the electrification of the Oeste de Minas Railway of Brazil were scheduled to be received April 14. The section to be electrified lies between Barra Mansa and Augusto Pestana. This is the third call for bids for electrification of this road during the past 18 months, none of the former offers having been acceptable to the government.

Specifications for the construction of the Kyogle-South Brisbane (Australia) Railway are being prepared prior to calling for tenders. It is estimated that the work will involve the expenditure of £3,500,000, of which amount the Federal Government will subscribe £1,963,000, New South Wales £1,137,000, and Queensland £400,000. This line will form a part of the uniform gage scheme.

The electrification of the Java State Railways is being considered. A collective appropriation for this purpose may be made in the 1926 budget, without mentioning the routes, the choice of which will depend chiefly to their proximity to water power installations.

The Indian government has awarded contracts for locomotives to German firms, according to reports. It is said that the Rhein-metal Fabrik Company, of Dusseldorf, has received an order for 14 locomotives, and the Maschinenbau Company, of Berlin, will furnish 7 locomotive boilers.

The loan for the improvement of the Sorocabana Railway has been arranged, between the Sao Paulo government and American and British bankers. The amount involved is \$15,000,000 to be issued in bonds at 95 with interest at 8 per cent. The preliminary contract was signed on March 18.

Conditions Improve in China—Negotiations with Bolsheviki Over Chinese Eastern

PEKING.

During the past month the railway situation has been improving slowly. Hostilities about Shanghai have ceased, and passenger train service northward has been restored to normal. The Blue Express is running twice a week and is properly heated, lighted and cleaned. Trains from Shanghai southward to Hangchow, the capital of Chekiang, however, have been only partially restored and freight trains on both lines out of Shanghai are very irregular. Peking-Mukden earnings are about half of normal, due partly to the use of equipment for supplying the Mukden forces operating in the region of Shanghai, partly to the stagnation in business and partly to the unrestored discipline. Express trains are running through between Peking and Hankow, but fear is expressed that the line may be cut at any time on account of the fighting now taking place on the Lung-Hai line near Loyang. The contending forces have seized 44 locomotives belonging to the Peking-Hankow and to the Lung-Hai and a proportional number of cars. In addition they are selling transportation and collecting the revenues on that section of the line, so that the revenues sent in to the head office are no more than one-third of normal. The Peking-Suiyuan is the only line which is duplicating the earnings of the early months of 1924. Due to the activities of that line, the coal and food shortage of Peking has been relieved.

No little credit is being accorded to the director of the Railway Department, C. S. Liu, a graduate of the University of Pennsylvania, for his tact in rehabilitating railway service. He has been wise enough to appreciate that the power of the Ministry of Communications is gone, but that as a unifying influence and a technical advisory board it can still be of considerable service to all interests using the railways. It has been necessary to take the regional commanders into his confidence and to put his experience at their service. In this way a considerable number of minor improvements have been effected. For example, on the Peking-Mukden line it has long been the practice for passengers to carry aboard the cars all the luggage which they could stow away. Backed by the Mukden provost-marshal, he has stopped this practice, and now everything larger than the luggage racks will accommodate must be checked as baggage and pay excess if above the respective class limits.

The strike on the Shantung Railway finally came to a head in spite of the resignation of the managing director appointed by the Ministry of Communications. On February 10, the strikers attacked a special train at Kiaochau which had been started under the direct supervision of the Japanese traffic manager and injured some twenty persons, including the crew and a Japanese who was assisting. Two trains at Kaomi were deserted by their crews and for three days the passengers were marooned, being refused the purchase of food by hucksters for a considerable portion of the time. Two days later a settlement was reached, the governor of the province being permitted to appoint the managing director (a military man) and the Ministry of Communications the assistant managing director, who would be in charge of the technical operation of the line. The ministry appointed H. Y. Hu, a graduate

of the University of Pennsylvania, for several years chief of the traffic section of the ministry. A mob met Mr. Hu's train at Tsinan as he went to assume office and would not permit him to get off. Hence the line is now in the exclusive control of the province of Shantung.

On February 11 the diplomatic corps at Peking addressed a note of advice to the Chinese foreign office on the condition of the railways calling attention to the deterioration in physical condition, impaired finances and the serious results upon foreign trade and more intimate foreign investments in China and saying "it is evident that the Chinese Government Railways before long will become insolvent." In Chinese circles this note is considered merely as another futile gesture and will receive much less attention than the demand two years ago for the control of the railway police force by foreign officers.

During the past week the Lincheng Indemnity claims have been paid. The American claims amounted to \$143,639 of which Miss Aldrich (a kinswoman of Rockefeller) received \$41,000.

Through passenger service from Fusan, Korea, to Moscow via the South Manchuria, Chinese Eastern and Trans-Siberian railways is announced for the near future. Passengers will have to change cars at Changchun, Harbin and Manchuli. The through fare will be 416.87 yen. The journey will require thirteen days, and the Tokio-Berlin trip is scheduled to take seventeen days, or a little more than two days longer than before the war. Food, first class, is estimated to cost about 80 yen for the complete trip. Sleeping berth charges are included in the train fare.

General Manager Ivanoff of the Chinese Eastern is making a claim for Bolshevik efficiency in the management of the line. He states that the current debt of the line has been considerably reduced during his few months of control and that interest rates on the remainder have been reduced from 18 to 12 per cent, at the same time securing an increase in the interest rate on railway balances from 4 to 6 per cent. This he has accomplished by dealing with banks other than the Russo-Asiatic which originally controlled the line.

The Bolshevik management of the Chinese Eastern has rebuilt the rate mountain on the Changchun branch so as to compel the movement of freight towards Vladivostok rather than toward Dairen.

This has reopened the old rate war in which the South Manchuria subsidizes carters who haul beans from Harbin and thereabouts overland to Changchun. Reports have it that because of the better port facilities at Dairen and because of the business connections built up during the past seven years of disorder on the Chinese Eastern, Chinese shippers are objecting very strenuously to being forced to deal through Vladivostok. Other disagreements with shippers have arisen in Harbin and it is announced that a rate parley will take place in Harbin at an early date. In the meantime Baron Okra, of the South Manchuria line, is known to be traveling in western Manchuria looking over the possibilities of extension for the Ssu-Tao branch of the South Manchuria.

Chinese are complaining of General Manager Ivanoff's discrimination against Chinese employees on the Chinese Eastern.



P. & A.

Car in Which Lincoln Rode to Gettysburg to Make His Famous Address—Recently Discovered in Use as Watchman's Shanty

Equipment and Supplies

Locomotives

THE NEW YORK CENTRAL is inquiring for 26 locomotive tenders of 15,000 gal. capacity.

THE BEAR CREEK LOGGING COMPANY has ordered one Mikado type locomotive from the Baldwin Locomotive Works.

THE NEWBURGH & SOUTH SHORE has ordered one, ten-wheel switching locomotive and one, six-wheel switching locomotive, from the Baldwin Locomotive Works.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 10, eight-wheel switching locomotives from the Lima Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of April 18.

Freight Cars

THE UNITED FRUIT COMPANY is inquiring for 40 fruit cars.

THE NORFOLK & WESTERN is inquiring for 1,935 hopper car bodies of 57½ tons' capacity.

THE WOODWARD IRON COMPANY has ordered 5, type G-6 extension side dump cars from the Clark Car Company.

E. ATKINS & Co., Cuba, has ordered 150 cane cars of 30 tons' capacity from the American Car & Foundry Company.

THE AMERICAN GAS & ELECTRIC COMPANY has ordered 4, type G-6 extension side dump cars from the Clark Car Company.

THE CHINESE GOVERNMENT RAILWAYS are inquiring through the car builders for 80 all steel box cars of 40 tons' capacity.

THE AMERICAN STEEL & WIRE COMPANY has ordered 10, type G-6 extension side dump cars from the Clark Car Company.

THE UNION REFRIGERATOR TRANSIT COMPANY has ordered 25 underframes, from the American Car & Foundry Company.

THE DELAWARE, LACKAWANNA & WESTERN has ordered 300 refrigerator cars from the American Car & Foundry Company. The railroad's inquiry was reported in the March 7 *Railway Age*.

THE CHILE EXPLORATION COMPANY has ordered from the General American Tank Car Corporation two tank cars of 10,000 gal. capacity, for export. Inquiry for this equipment was reported in the *Railway Age* of March 28.

THE MINNEAPOLIS & ST. LOUIS is now inquiring for prices on 1,000 box cars, 500 gondola cars, 100 refrigerator cars and 200 flat cars. In the *Railway Age* of February 14 mention was made that this company had arranged with the American Car & Foundry Company for the purchase of this equipment.

Passenger Cars

THE SOUTH AFRICAN RAILWAYS are inquiring for 6 side-door suburban coaches.

THE CANADIAN NATIONAL has ordered from the J. G. Brill Company, two combination passenger and baggage gasoline rail motor cars.

THE INTERNATIONAL RAILWAYS OF CENTRAL AMERICA have ordered 6 observation cars 44-ft. 3½-in. long, from the Wason Manufacturing Company.

THE SOUTHERN PACIFIC has ordered from the Standard Steel Car Company one steel dynamometer car. Inquiry for this equipment was reported in the *Railway Age* of March 21.

THE FLORIDA EAST COAST has ordered 15 coaches and 15 baggage cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of March 28.

Iron and Steel

THE MICHIGAN CENTRAL is inquiring for 11,000 tons of structural steel.

THE PENNSYLVANIA is inquiring for 87½ tons of steel for a bridge at Union City, Pa.

THE ERIE has ordered 300 tons of steel for a bridge at Paterson, N. J., from the McClintic-Marshall Company.

THE BALTIMORE & OHIO has ordered 200 tons of steel for bridges from the Mt. Vernon Bridge Company.

THE SEABOARD AIR LINE has ordered 700 tons of steel for bridges from the Virginia Bridge & Iron Company.

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 400 tons of structural steel for a viaduct in Bloomington, Ind.

THE BOSTON & ALBANY has ordered 400 tons of steel for use at Springfield, Mass., from the Boston Bridge Company.

THE PENNSYLVANIA has ordered from the American Bridge Company 200 tons of steel for a bridge at Louisville, Ohio.

THE CLINCHFIELD RAILROAD has ordered 650 tons of steel for a bridge at Erwin, Tenn., from the Virginia Bridge & Iron Company.

THE LITCHFIELD & MADISON has ordered 2,000 tons of rails and 500 tons of angle bars, bolts and spikes from the Inland Steel Company.

THE READING COMPANY has ordered 2,400 tons of steel for a freight car repair shop at Reading, Pa., from the McClintic-Marshall Company.

THE CHICAGO, BURLINGTON & QUINCY has ordered 305 tons of structural steel for a bridge in St. Louis, Mo., from the St. Joseph Structural Steel Company.

Machinery and Tools

THE LONG ISLAND is inquiring for one 15-ton locomotive crane.

THE NORTHERN PACIFIC has placed an order for a 48-in. car wheel borer.

THE SOUTHERN RAILWAY has placed an order for a 15-ton electric crane.

THE LOUISVILLE & NASHVILLE has placed orders for two 100-ton bushing presses.

THE VIRGINIAN RAILWAY has placed an order for a 74-in. by 21-ft. engine lathe.

THE NEW YORK CENTRAL has placed an order for a 90-in. locomotive axle journal turning lathe.

THE UNION PACIFIC has ordered one standard locomotive crane from the American Hoist & Derrick Company.

THE SOUTHERN PACIFIC has ordered one 25-ton locomotive crane from the American Hoist & Derrick Company.

THE INLAND STEEL COMPANY has ordered one 15-ton electric traveling crane from the Alliance Machine Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered one 30-ton, 50-ft. span gantry crane from the Milwaukee Electric Crane & Manufacturing Company.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one motor-driven vertical high-power drilling machine to drill 4-in. holes with 24-in. reach and one motor-driven 2-in. double head bolt cutter.

THE ILLINOIS CENTRAL has awarded a contract to the Brown Boveri Company, Baden, Switzerland, with American headquarters in Chicago, for four mercury arc rectifiers of 1,500 kw., each to be installed in sub-stations located at Harvey, Ill., and Kenwood in connection with the electrification of the Chicago terminal.

Signaling

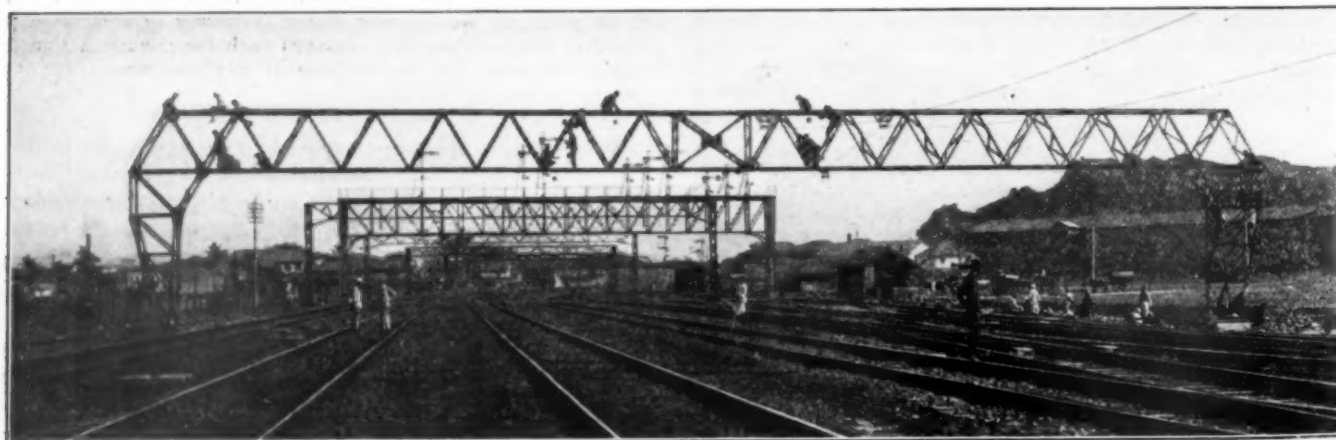
THE NEW YORK CENTRAL has ordered from the General Railway Signal Company an electric interlocking, 177 working levers, for Signal Station 47, East Buffalo, N. Y. This installation is a part of the program for a new track layout in connection with the proposed new Buffalo terminal.

THE NEW YORK CENTRAL has ordered from the Hall Switch & Signal Company, Garwood, N. J., for signal work at Stuyvesant, N. Y., Buffalo, N. Y., Katonah, N. Y., Rochester, N. Y., and Utica, N. Y., 108 light signals, 32 light signal markers, 550 relays, 340 switch boxes and other material.

THE CHICAGO, BURLINGTON & QUINCY has ordered from the General Railway Signal Company, color light signals and other material for automatic block signaling between Machens, Mo., and Old Monroe; between Clarksville, Mo., and Louisiana, and between Hannibal, Mo., and Monroe, an aggregate length of road of about 65 miles. The order includes 193 three-light signals, 100 two-light, 140 switch boxes, 61 switch indicators and other material.

N. Y. C. Awards Train Control Contract

The New York Central has awarded a contract to the Miller Train Control Corporation for the installation of its intermittent inductive train control system, including the plain automatic stop, cab reset and forestalling privilege, permissible under Interstate Commerce Commission's amended order of July 18, 1924, and approved on Chicago & Eastern Illinois installation. The initial installation will be on the four-track line of the N. Y. C.'s Erie division from Cleveland to Painesville, Ohio—66 miles of track—with equipment for five passenger and five freight locomotives.



Electrification of Great Indian Peninsula's Bombay Suburban Lines—a 129-ft. Span in the Overhead Structure. Embracing 8 Tracks

Supply Trade News

The Forged Steel Wheel Company has moved its office from 170 Broadway to 120 Broadway, New York City.

The Railroad Accessories Corporation, New York, has moved its offices from 50 Church street to 415 Lexington avenue.

The Nathan Manufacturing Company has removed its executive offices from 21 East Fortieth street to 250 Park avenue, New York City.

The Standard Steel Car Company and subsidiary companies have removed their offices from 170 Broadway to 120 Broadway, New York City.

C. B. Semple, 104 South Michigan avenue, Chicago has been appointed Chicago representative of the C. H. Whall Company, Boston, Mass.

The New Insulated Wire Works of the General Electric Company has been removed from 1737 Broadway to 120 Broadway, New York City.

The Browning Crane Company is the new name adopted by the Browning Company, Cleveland, Ohio, makers of locomotive cranes and buckets.

The office of William H. Keller, Inc., has been removed from 50 Church street to 54 Dey street, New York City. A. B. Inness is district manager.

The Atlas Steel Casting Company, Buffalo, N. Y., has removed its New York sales office from 200 Fifth avenue to 30 East Forty-second street, New York City.

The Davis Equipment Company and M. E. Davis, dealers in railroad and construction equipment have removed their offices from 50 Church street to 8 West Fortieth street, New York City.

The Ingersoll-Rand Company, New York, has made arrangements with Carels Brothers, Ghent, Belgium, by which the Belgian concern will have the right to manufacture the Ingersoll-Rand solid-injection type of oil engine.

The Harnischfeger Corporation, Milwaukee, Wis., has opened a branch office at 431 First National Bank building, Birmingham, Ala., in charge of James Van Buskirk, who has been transferred from the company's office at Detroit, Michigan.

R. W. Kinkead, former chief engineer of the welder division of the Lincoln Electric Company, Cleveland, Ohio, has been

transferred to the sales department and now is regional director of sales. His headquarters are in the Ellicott Square building, Buffalo, N. Y.

The E. G. Long Company, 50 Church street, New York City, has been appointed selling agent in New York for the American High Speed Chain Company, Indianapolis, Ind. Sales promotion will continue in charge of Wilbur E. Petty as heretofore, with headquarters at 50 Church street, New York City.

W. C. Peyton, vice-president of the Standard Stoker Company, 350 Madison avenue, New York City, has been elected president, to succeed W. A. Larner, who has resigned as president and a director. A. M. Hunt has been elected a director, to succeed Mr. Larner. H. C. Oviatt, assistant to president, has also resigned, effective May 1.

The Signal Accessories Corporation, Utica, N. Y., has made arrangements with the Brinard Sales & Construction Company to act as sales representative for the Eastern district with M. R. Briney as sales manager and J. J. Hubbard as eastern sales representative. The New York office of the Signal Accessories Corporation has been moved to 441 Lexington avenue.

Jenkins Brothers, New York, has purchased outright the good will and stock of the corporation of H. A. Rogers Co., 87 Walker street, New York, dealers in railway, mill, mining and contractors' supplies. This corporation has for many years been the sole agent in the United States for John Moncrieff, Ltd., Perth, Scotland, manufacturer of Moncrieff Scotch gauge glasses, and this agency will be carried in future by Jenkins Brothers. The other specialties dealt in by the H. A. Rogers Co. will be closed out and discontinued. William A. Tucker, who has been connected with H. A. Rogers Co. since 1880, will in future be associated with Jenkins Brothers.

The Brinard Sales & Construction Company, Inc., has recently been formed, with offices at 441 Lexington avenue, New York. The company will engage in the manufacture, sale and construction of railroad devices. The officers are: Mark R. Briney, president; John J. Hubbard, vice-president, and Edward Shannahan, secretary. Mark R. Briney has been engaged in the signal business since 1893, of which time several years were spent in the signal department of the Chicago & North Western, and later as superintendent of construction for the General Railway Signal Company, following which he was eastern manager of the same company, then sales manager of the Federal Signal Company. Since the consolidation of these two companies he has been special representative for the General Railway Signal Company. John J. Hubbard, vice-president, has been engaged in signal work with the New York Central, the Federal Signal Company and the General Railway Signal Company for over 20 years, nine of which were on the New York Central, the last three of the nine years being in charge of signal construction work on that road and the Boston & Albany. Later with

FREIGHT CARS ORDERED, INSTALLED AND RETIRED

Month 1924	Domestic orders reported during month	Installed during month	Aggregate capacity tons	Retired during month	Aggregate capacity tons	Owned at end of month	Aggregate capacity tons	An order as of first of following month	Building in R. R. shops
January	6,020	15,589	707,367	12,329	516,695	2,310,032	100,644,107	21,696	2,417
February	18,365	11,386	554,481	10,466	411,228	2,310,570	100,767,731	40,030	2,715
March	35,846	9,962	446,094	8,726	352,481	2,311,405	101,165,332	62,340	2,697
April	11,189	8,718	369,978	8,026	306,288	2,312,074	101,223,891	62,289	2,739
May	435	9,199	439,516	9,059	360,212	2,312,237	101,303,200	57,266	2,467
June	387	10,909	538,118	8,347	321,094	2,314,798	101,569,593	57,735	2,269
July	533	16,583	1,151,302	8,413	316,927	2,322,968	102,388,652	51,156	4,602
August	4,751	15,452	785,288	8,834	333,173	2,329,582	102,845,000	40,961	3,618
September	22,520	15,455	779,078	9,337	370,607	2,336,147	103,270,000	47,553	3,045
October	11,853	16,598	834,762	10,504	*418,816	2,342,149	103,688,000	38,403	3,574
November	13,038	11,705	579,234	10,678	463,970	2,342,479	103,767,000	42,765	3,159
December	9,526	6,763	311,254	11,918	488,035	2,337,229	103,585,000	54,202	6,478
January, 1925	10,312	11,768	551,263	7,867	326,812	2,341,109	103,812,974	58,910	5,285
February	5,388	15,024	721,867	9,453	365,111	2,346,687	104,169,525	50,603	4,878
March	4,677								
Total for 2 months...		26,792							
Total for 3 months...	20,377								

* Corrected figure.

¹ Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops but not rebuilt equipment.

² Figures as to installations and retirements prepared by Car Service Division A. R. A. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. The figures as to orders as given in the first column of table is not comparable with figures relating to installations given in succeeding columns.

he signal companies he filled the positions of superintendent of construction and resident manager. Edward Shannahan, secretary, has been engaged with the Federal Signal Company and later with the General Railway Signal Company, with which companies he has been associated for the past fifteen years as quotation clerk, chief clerk and sales representative.

Obituary

P. D. E. Chapin, manager of the creosoted post and pole sales of the Long Bell Lumber Company, Kansas City, Mo., died in a hospital in that city on April 1.

Herman Green, president of the Adolph Green Construction Company, railroad contractors, with headquarters in Green Bay, Wis., died in that city on April 22 as the result of an accident which occurred while he was directing the unloading of construction equipment.

Trade Publications

INSIDE FACTS.—In an eight-page folder the Independent Pneumatic Tool Company presents the salient features and particular advantages of the Thor portable electric drill by means of a series of illustrations showing the interior construction of the various parts. A table of specifications gives the capacity, speed, weight, etc., of the various types of drills manufactured by this company.

CONCRETE ROOFING TILE.—The Federal Cement Tile Company, Chicago, has issued a four-page folder containing photographic illustrations of installations of this company's roofing tile on various railroads. These include roofs of shops, freighthouses, passenger stations, train sheds, and car repair sheds. One page is devoted to drawings illustrating the manner in which this form of construction is applied to various types of roofs.

"IT DIGS."—The McMyler Interstate Company has issued a 24-page bulletin which constitutes a detailed exposition of the McMyler Interstate No. 2 steam shovel. The text follows an unusually direct arrangement, taking up each feature of the equipment in turn and pointing out salient features with the aid of adjacent illustrations. Most of these are photographs or wash drawings, but some use is made of line diagrams in connection with tables of dimensions, clearances, etc. The presentation has been made attractive without resort to the complex layout which too frequently confuse the readers of catalog matter.

BRAKE BEAMS AND SUPPORTS.—A loose-leaf catalog containing 75 six-inch by nine-inch pages of mechanical drawings of "Creco" equipment has been issued recently by the Chicago Railway Equipment Company, Chicago. The drawings presented have been selected to show the standards of the various types of brake beams, side bearings and "Creco" third and fourth point brake beam supports and safety devices manufactured by this company. The drawings and information contained in this catalog are presented in an attractive form and logical sequence, the catalog being intended as an aid in making satisfactory selections of equipment to meet all requirements and conditions of service. Brake beam repair parts can be ordered by numbers shown on spare part charts or by pattern numbers shown in the main body of the catalog.

ROCK DRILLS.—In five new bulletins the Sullivan Machinery Company presents in a most practical form, information concerning five types of pneumatic drills manufactured by that company. These bulletins are: No. 80-A, covering diamond drills for gas engine drives; 81-AE, relating to a water jet hammer drill; 81-EA, regarding a hammer drill for channeling or line drilling; 81-F, describing a rotator hammer drill, and 81-G, relating to an air-feed stoping drill. The diamond drill and the stoping drill represent new developments of this company. The material in these bulletins is presented essentially in the form of descriptive articles with topical side headings, reproductions of photographs and drawings, and tables of essential information. The bulletins have been prepared in uniform size and binding suitable for filing in the engineers' reference laboratory.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—Bids are being taken for the construction of a locomotive repair shop at Albuquerque, New Mexico.

ATCHISON, TOPEKA & SANTA FE.—The contract for the erection of the through steel spans of the bridge across the Mississippi river at Fort Madison, Iowa, will be awarded about the first of February, 1926. Company forces will place the nine 100-ft. double track girders for the railroad and the nine 100-ft. girders for the wagon road at the east end, as well as the nine 80-ft. double track girders and the nine 80-ft. girders for the wagon road at the west end. The contract to be awarded next year will cover the erection of four 270-ft. spans, a 184-ft. through span and a 534-ft. through draw span. The award of the contract for the construction of the sub-structure of the bridge was reported in the *Railway Age* of April 4.

BALTIMORE & OHIO.—A contract has been awarded to the Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., for the construction of improvements to the water station facilities at Keyser, W. Va., to cost approximately \$35,000.

BALTIMORE & OHIO.—A contract has been awarded to George F. Dobbin, Philadelphia, Pa., for the reconstruction of a highway span over the railroad company's tracks at Twenty-fourth and Market streets, Philadelphia, to cost approximately \$27,000—the expense of which will be partly borne by the City of Philadelphia.

CHICAGO, MILWAUKEE & ST. PAUL.—The federal court at Chicago has authorized the expenditure, by the receivers, of \$1,500,000 for the construction of an engine terminal at South St. Paul, Minn. The terminal will include an enginehouse, repair shops, store buildings and related facilities. A large classification yard will be included in the project and this will require a large amount of filling in of land, the earth to be dredged from the river. Plans for the terminal are now being completed.

CHICAGO & WESTERN INDIANA.—Bids are being taken for the construction of extensions to the pipe lines at the Fifty-first street coach yard, Chicago, and at Ninety-fourth street and Manistee avenue, South Chicago.

CHICAGO, ROCK ISLAND & PACIFIC.—The construction of a large freight terminal at Dallas, Texas, to be used jointly with the St. Louis Southwestern, is planned.

COWLITZ, CHEHALIS & CASCADE.—The Interstate Commerce Commission has granted permission to this company to extend its line from its terminus at Lacamas, Ore., southeasterly, 14 miles in Lewis county at a cost of approximately \$386,680. Work must begin by July 1, 1925, and be completed by June 30, 1926. Permission to retain excess earnings was denied.

GREAT NORTHERN.—A contract has been awarded to F. J. Sievers, Minneapolis, Minn., for the construction of a power house and water tank for the new engine terminal at Troy, Mont., authorization of which was reported in the *Railway Age* of February 14.

KANSAS CITY, MEXICO & ORIENT.—The construction of an 11½-mile extension of the Orient line in Mexico from Marquez, Chihuahua, toward the international boundary, has been authorized. The construction of this extension is the first step in the company's plan to eliminate gaps in its lines.

KANSAS CITY, MEXICO & ORIENT.—A subsidiary bridge company will be formed to construct a bridge across the Rio Grande about five miles below Presidio, Texas. It is planned to undertake at once the construction of a line between Alpine, Texas, and the northern end of the Mexican line at Marquez, Chihuahua, to close the present gap.

MAINE CENTRAL.—This company closed bids on April 29 for the construction of a freight car repair shop at Waterville, Me., to cost approximately \$47,000, to replace a building destroyed by fire.

MEXICALI & GULF.—Construction of a line from Calexico, Cal., to the Gulf of California, a distance of 135 miles, has been started. The first unit from Calexico to LaBomba, Lower California, will

be approximately 65 miles long. The remainder will be constructed at a later date.

MISSOURI-PACIFIC.—This company has applied to the Interstate Commerce Commission for authority to construct a line from South Dupo, Ill., to Columbia Quarry, 3.5 miles.

NEW YORK, PITTSBURGH & CHICAGO.—The Reading and the Pennsylvania, replying to the questionnaire sent by the Interstate Commerce Commission to the roads in the territory involved in this company's application for a certificate authorizing the construction of a line from Allegheny to Easton, Pa., 283 miles, with two branches making 61 miles additional, oppose the granting of the application on the ground that the additional line is not needed. The Reading says that it would duplicate existing facilities and its functions would be almost entirely competitive and it would appear to be able to create practically no new business. The Pennsylvania says its construction would have the effect of further reducing the return of existing carriers in the territory, that are now earning less than a fair return, and that the territory is amply served by existing roads. It says the proposed route is impracticable of construction at certain points except at an abnormally high figure and that the policy of the government under the transportation act "is to avoid unnecessary waste in the construction of new lines and to consolidate existing lines so as to form fewer and stronger systems and deal with the many short and weak lines. To approve of the construction of this railroad would be contrary to that policy."

READING.—A contract for grading and masonry in connection with a change in the channel of Mahoning creek at Maudsley, Pa., has been awarded to Thomas B. Evans, Danville, Pa.

READING.—This company has awarded a contract to the Fegles Construction Company, Ltd., Minneapolis, Minn., for the construction of a reinforced concrete grain elevator at Twentieth street and Pennsylvania avenue, Philadelphia. The contract includes the furnishing and erection of the plant complete, with the exception of the cement, which will be furnished by the railroad. Certain items of machinery and equipment will be purchased direct through the railroad's purchasing department.

WABASH.—Bids will soon be closed for the construction of 3 reinforced concrete coaling stations, one at St. Louis, Mo., another at Bement, Ill., and another at Tracey, Ia. These were reported in the *Railway Age* of March 21.

Florida East Coast Improvement Program

Supplementary to the report of the Florida East Coast's improvement program for 1925, which was published in the *Railway Age* of April 11, the actual status of bidding and contracts on the individual projects which go to make up this program follow:

NATURE OF WORK AND LOCATION	STATUS BIDS OR CONTRACTS
Construction of 58 miles of additional main track. Jupiter to W. P. Beach,	Grading and part track work to J. A. Kelley Co. Balance track work not let. Trestles to Chas. Eng. & Cont. Co.
Construction of additional main track.	C. G. Kershaw Contr. Co.
Construction of 12.52 miles of that portion of the Okeechobee Miami Extension known as the	J. A. Kelley Co., exclusive of 2 steel and concrete bridges which are contracted to Union Bridge & Const. Co.
Construction of double track masonry piers, single track girder spans, and the filling of	Contract with Union Bridge and Construction Company for substructure and the Va. Bridge & Iron Co. for superstructure
Double track cut-off extending southerly from present main line MP 37 plus 882 ft. to	C. G. Kershaw Contr. Co., exclusive of two steel concrete bridges which are not let yet
Construction of 3rd unit general office building and arcade.	General contract with W. P. Thurston Co., Richmond, Va., and Heating Contract with Walter Denson, Columbus, Ga.
Replacement of 18 timber trestles with concrete pipe and fill, or ballasted deck trestles. Concrete substructure	Contract made only for bridge at Arch Creek. Chas. Eng. & Cont. Co., substructure; Va. Bridge & Iron Co., superstructure

NATURE OF WORK AND LOCATION	STATUS BIDS OR CONTRACTS
Installation of deck plate girder spans on masonry piers and filling trestle. Jupiter—MP 282.58...	Bids received
Construction of shops for general locomotive and car repairs.	Work to be contracted
Laid for additional shop facilities and the construction of 4-100 car capacity receiving track.	Work to be contracted
Installation of automatic signals on 87 miles of double track.	Bids requested on AC installation
Replacement of existing main line open deck trestles on Val. Sec. 1, with creosoted ballasted deck structures.	Work to be done by company forces
Replacement of 24 timber trestles on Val. Sec. 2, with concrete culvert pipe and fill.	Work to be done by company forces
Construction of freight handling facilities comprising:	Grading contract let to the Hall Construction Co., Bainbridge, Ga. Bids on track work now being received
(a) North and south bound classification yards of 400 cars capacity each	(c) North bound receiving yard, capacity (e) One 50 ft. 150 ton track scales (f) Permanent yard office 600 cars
(b) South bound departure yard, capacity 720 cars	(d) Portion of permanent water station Bowden
Installation of an 850 G.P.M. pumping station at Taylor creek with 12-	in pipe line. Ft. Pierce
Extend existing passing track to 110-car capacity, and construct lap siding with 110-car capacity.	Bids will be requested
Construction of portion of proposed new freight terminal facilities, consisting of the following:	Bids to be received at once
(a) 2-100 car capacity south bound receiving tracks	Bids are now being received
(b) 5-50 car capacity southbound classification tracks	(e) 2-50 car capacity northbound classification tracks
(c) 2-100 car train capacity southbound departure tracks	(f) 2-100 car train capacity northbound departure tracks
(d) 2-100 car train capacity	(g) Portion of permanent water station
Construct 1,600 ft. extension to present passing track to provide 110-car capacity, and	(h) 2-50 ft. 150 ton track scales (i) Temporary yard office Hialeah
Extend existing passing track to 110-car capacity and construct lap siding of 110-car capacity.	construct 110-car capacity lap siding. Ormond
Construct passing track on west side of main track with 110-car capacity to provide a lap siding.	Bids to be received at once
Extend present passing track to provide a 110-car capacity, and construct a 20-car capacity commodity track with driveway.	Bids to be received at once
Construct a 110-car capacity passing track with crossover and extend existing commodity track to accommodate 25 additional cars.	Bids to be received at once
Construct 1,822 ft. extension to present passing track and proposed dray track facilities.	Bids to be received at once
Construct 110-car capacity passing tracks, one each at	Coconut Grove
Construct 1,865 ft. extension to present passing track to provide capacity of 110 cars,	Bids to be received at once
Installation of automatic signals on 83 miles of double track.	Rio, Jensen, Maytown, Salerno
Construction of additional main track, Daytona to Spruce Creek.	Bids to be received at once
Construction of additional main track, Titusville to Bonaventure.	Bids to be received at once
Construction of Larkin Passing Track.	MP 110 to MP 119.5..
	Entire work to Reid & Lowe
	J. A. Kelley Co., exclusive of two trestles let to Chas. Eng. & Const. Co.

The company will also apply with its own forces slag ballast under 234 miles of track and rock ballast under 152 miles. Tie plates will be applied by company forces on tie renewals on 394 miles of line. In all about 80 miles of track will be relaid with standard ASCE 90-lb. rail and the company is giving consideration to the matter of having this work done under contract.

Railway Financial News

ALEXANDRIA & WESTERN.—Authorized to Abandon Line.—The Interstate Commerce Commission has granted authority for the abandonment of this line from Alexandria, La., to McFarland, 20.65 miles, except for a portion that is to be maintained in service until August 1, 1925, unless at some time prior thereto notice is given by a lumber company served, that operation of such portion of the line is no longer required. This line was built for the purpose of carrying lumber. It abandoned passenger service on the authority of the Louisiana Commission in April, 1924. Efforts to sell the road as a going concern had been unsuccessful.

ANN ARBOR.—Bond Issue.—The Interstate Commerce Commission has granted authority to this company to procure authentication and delivery of \$432,500 of 30-year 6 per cent improvement and extension mortgage bonds, these bonds to be held subject to further order of the commission.

ATCHISON, TOPEKA & SANTA FE.—Bond of Subsidiary Company.—The Eldorado & Santa Fe, all of the stock of which is owned by the Atchison, Topeka & Santa Fe, and which is operated by lease, has been authorized to issue one first mortgage 6 per cent bond amounting to \$3,500,000, to be delivered to the parent company in payment for advances for capital purposes.

Similar authority has been granted by the commission for the issuance by the Texas & Gulf of a first mortgage 6 per cent bond, Series A, amounting to \$779,000. Similar authorizations covering bond issues by other subsidiary companies of the Atchison, Topeka & Santa Fe to be delivered to the parent company in payment for advances were reported in the *Railway Age* of April 18 and April 25.

Annual Meeting. At the annual meeting held in Topeka on April 23 C. J. Engel, vice-president, was elected a director to succeed John W. Davis, resigned.

BALTIMORE & OHIO.—Equipment Trust.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$8,145,000 of 4½ per cent equipment trust certificates, to be sold to Kuhn, Loeb & Co., and Speyer & Co., at 96.68.

BALTIMORE & OHIO.—Equipment Trusts Sold.—Kuhn, Loeb & Co., Speyer & Co., and the National City Company have sold \$8,145,000 4½ per cent equipment trust certificates, Series B, maturing in equal amounts in annual installments from May 1, 1926, to May 1, 1940. The certificates were sold at an average price for all maturities at \$98.43 to yield 4.75 per cent. The certificates are secured by 3,000 70-ton gondola cars, 2,000 steel box cars, 10 coaches, 10 electrically equipped coaches and 5 dining cars, costing not less than \$10,860,000.

CHESAPEAKE & OHIO.—Annual Meeting Adjourns.—The annual meeting of the Chesapeake & Ohio Railway held at Richmond, Va., on April 21, was adjourned to June 23. There was read a letter from the stockholders' protective committee, of which George Coles Scott is chairman, protesting against holding the meeting on the ground that there had not been made available to stockholders, fifteen days before the meeting, the annual report for 1924, as required by the rules of the New York Stock Exchange.

CHESAPEAKE & OHIO.—Sandy Valley & Elkhorn Purchased.—The Chesapeake & Ohio has purchased from the Consolidation Coal Company the latter's interest in the Sandy Valley & Elkhorn. The latter operates a line 32 miles long extending from Shelby, Ky., where it connects with the Chesapeake & Ohio, to Jenkins. The road was formerly the property of the Baltimore & Ohio which took it over when the line was completed on October 1, 1912. It was sold by the Baltimore & Ohio to the Consolidation Coal Company on July 1, 1923. The coal company owned all of the \$500,000 capital stock and 2,200,000 bonds.

CHICAGO, MILWAUKEE & ST. PAUL.—Statement by I. C. C.—In response to inquiries relating to possible assistance to the St. Paul through the Interstate Commerce Commission the secretary of the commission on April 25 issued the following statement:

H. E. Bryam, president of the Chicago, Milwaukee & St. Paul, had a conference with Division 4 of the commission, at that time composed of Commissioners Meyer, Eastman and Potter, sometime early in the autumn

of 1924. Mr. Bryam expressed his solicitude regarding the general St. Paul situation and inquired whether it would be possible for the commission to make a loan to his company either out of the contingent fund or out of the revolving fund. He also wanted to know whether the commission would be willing to recommend to the Secretary of the Treasury the substitution of certain collateral for other collateral now on deposit with the Treasury because from the standpoint of government security the collateral to be substituted Mr. Bryam thought would be just as good as what is now there and from the commercial standpoint of the company the collateral to be released would be very much more useful.

Division 4 advised Mr. Bryam that the amount of money in the contingent fund was small and none of it was at present available for the making of loans. With respect to the revolving fund provided by the transportation act, 1920, Mr. Bryam was advised that his applications had been granted in full in the loans already made and that there existed no statutory authority for making further loans. This left only one possible source of relief through the commission open to the St. Paul; namely, the substitution of collateral. With respect to this Mr. Bryam was told that the commission would be disposed to do everything within its power to aid the St. Paul road, that the substitution of collateral would be given most careful consideration when a definite proposition might be made in the form of an application on the part of the St. Paul road. No such application was ever filed and the commission had no further conference with Mr. Bryam. Whether or not the directors of the St. Paul road were in a position to avail themselves effectively of this possible source of relief we are not advised. Division 4 did not and naturally could not make any promises to Mr. Bryam in the absence of a specific application.

DULUTH, SOUTH SHORE & ATLANTIC.—1924 Earnings.—The annual report for 1924 shows a deficit after charges of \$244,325 as compared with a deficit of \$180,496 in 1923. Figures for the Mineral Range, given separately in the Duluth, South Shore & Atlantic report, show for 1924 a deficit after interest charges of \$39,203, as compared with a deficit in 1923 of \$34,241. Selected items from the income statement of the Duluth, South Shore & Atlantic follow:

DULUTH, SOUTH SHORE & ATLANTIC		1924	1923
Average mileage operated.....		591.30	591.30
Railway operating revenues.....	\$5,905,360		\$5,861,203
Maintenance of way.....	\$1,008,596		\$827,019
Maintenance of equipment.....	938,980		899,410
Transportation	2,560,819		2,679,663
Total operating expenses.....	\$4,786,372		\$4,694,926
Net revenue from operations.....	\$1,118,989		\$1,166,277
Railway tax accruals.....	367,354		347,636
Railway operating income.....	\$751,531		\$818,513
Net railway operating income.....		(Not shown)	
Gross income	\$947,747		\$914,679
Interest on funded debt.....	\$871,769		\$867,699
Total deductions from gross income.....	\$1,192,072		\$1,095,175
Net income, deficit.....	\$244,325		\$180,496

GREAT NORTHERN.—Abandonment.—The Interstate Commerce Commission has granted authority for the abandonment of a branch line in Judith Basin County, Mont., 7.06 miles, built to serve a coal mine since abandoned.

GULF, MOBILE & NORTHERN.—Bonds.—Authority has been given by the Interstate Commerce Commission to issue not exceeding \$4,000,000 first mortgage series B 5½ per cent bonds, to be exchanged for a like amount of first mortgage 6 per cent series A bonds, all of which are owned by the applicant and which will be canceled. The series B bonds will be dated April 1, 1925, and mature April 1, 1950. They have been sold to Kuhn, Loeb & Co. at 96.75 and accrued interest. Proceeds are to be used to liquidate certain obligations to the United States and to several trust companies, aggregating \$2,191,747, to purchase equipment costing approximately \$307,050 and to make additions and betterments totaling \$1,347,909. The sale of the bonds by Kuhn, Loeb & Co. was reported in the *Railway Age* of March 28.

GULF, TEXAS & WESTERN.—Valuation.—The Interstate Commerce Commission has issued a final valuation report finding the value for rate-making purposes of the property of the Gulf, Texas & Western, owned and used for common carrier purposes, to be \$1,668,000 as of June 30, 1917. The company had claimed a value of at least \$2,500,000.

LEHIGH & HUDSON RIVER.—New Director.—W. S. Jenney, vice-president and general counsel of the Delaware, Lackawanna & Western, has been elected a director of the Lehigh & Hudson River, succeeding Lewis A. Riley, deceased.

LONG ISLAND.—Equipment Trust.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,095,000 of 5 per cent equipment trust certificates.

(Continued on page 1127)

Annual Report

Union Pacific Railroad Company Twenty-Eighth Annual Report— Year Ended December 31, 1924

NEW YORK, N. Y., April 9, 1925.

TO THE STOCKHOLDERS OF UNION PACIFIC RAILROAD COMPANY:

The Board of Directors submits the following report of the operations and affairs of the Union Pacific Railroad Company for the calendar year ended December 31, 1924, including the Oregon Short Line Railroad Company, whose entire Capital Stock is owned by the Union Pacific Railroad Company, the Oregon-Washington Railroad & Navigation Company, whose entire Capital Stock (except fifteen qualifying shares held by Directors) is owned by the Oregon Short Line Railroad Company, and the Los Angeles & Salt Lake Railroad Company, whose entire Capital Stock is owned, one half each, by the Union Pacific Railroad Company and the Oregon Short Line Railroad Company. For convenience, the four companies are designated by the term "UNION PACIFIC SYSTEM."

The decrease of \$1,287,364.59 in "Income from Investments and Sources Other Than Transportation Operations" was due to decrease in dividend received from Pacific Fruit Express Company, offset in part by net increase in dividends on stocks of other companies. In 1923 the Pacific Fruit Express Company paid an extra dividend out of accumulated surplus.

The increase of \$1,134,552.50 in "Fixed and Other Charges" rep-

resents principally the net of changes in interest on funded debt. The principal changes were as follows: Increases of \$756,250 and \$196,362.75, representing difference between full year's interest accruing in 1924 and interest from dates of sale to December 31st in 1923 on \$20,000,000 face value of Union Pacific Railroad Company First Lien and Refunding Mortgage 5% Gold Bonds and on \$5,687,000 face value of Union Pacific Equipment Trust 4½% Certificates Series C, sold during 1923. Increase of \$59,417.96, interest on \$3,000,000 face value of Union Pacific Equipment Trust 4½% Certificates Series D sold April 1, 1924. Decrease of \$34,014.16, being difference between full year's interest in 1923 and interest for five months in 1924 on \$833,000 face value of Union Pacific Equipment Trust 7% Certificates Series A which matured June 1, 1924.

The decrease of \$8,903,797.61 or 5.7% in "Freight Revenue" was due to decrease of 2.1 per cent in net ton miles of revenue freight carried (including freight carried by one System company for another on which freight charges must be assessed under the Interstate Commerce Law) and decrease of 4 per cent in average revenue per ton mile occasioned by fluctuations in the kinds of commodities hauled, the average level of freight rates being substantially the same in both years. There was a decrease in the volume of fruits, vegetables and other agricultural products transported

The income for the calendar year 1924, compared with the calendar year 1923, after excluding all offsetting accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Company, was as follows:

	Calendar Year 1924	Calendar Year 1923	Increase	Decrease
Transportation Operations.				
Operating Revenues	\$199,035,117.76	\$211,318,465.31	.....	\$12,283,347.55
Operating Expenses	141,611,098.09	152,249,080.27	.....	10,637,982.18
Revenues over Expenses	\$57,424,019.67	\$59,069,385.04	.....	\$1,645,365.37
Taxes	14,457,715.43	13,573,066.63	\$884,648.80	.....
Uncollectible Railway Revenues	29,681.31	21,783.69	7,897.62	.....
Railway Operating Income	\$42,936,622.93	\$45,474,534.72	.....	\$2,537,911.79
Rents from use of joint tracks, yards, and terminal facilities	1,377,119.93	1,262,890.88	\$114,229.05	.....
.....	\$44,313,742.86	\$46,737,425.60	.....	\$2,423,682.74
Hire of equipment—debit balance	\$4,274,780.69	\$4,938,151.82	.....	\$663,371.13
Rents for use of joint tracks, yards, and terminal facilities	2,125,800.77	2,139,028.25	.....	13,227.48
.....	\$6,400,581.46	\$7,077,180.07	.....	\$676,598.61
Net Income from Transportation Operations	\$37,913,161.40	\$39,660,245.53	.....	\$1,747,084.13
Income from Investments and Sources other than Transportation Operations.				
Dividends on stocks owned	\$8,122,395.00	\$9,473,676.25	.....	\$1,351,281.25
Interest on bonds, notes, and equipment trust certificates owned	6,433,990.45	6,008,540.75	\$425,449.70	.....
Interest on loans and open accounts—balance	396,854.96	642,739.35	.....	245,884.39
Rents from lease of road	121,531.80	239,162.07	.....	117,630.27
Miscellaneous rents	449,971.93	430,573.40	19,398.53	.....
Miscellaneous income	701,457.82	718,874.79	.....	17,416.91
Total	\$16,226,202.02	\$17,513,566.61	.....	\$1,287,364.59
Total Income	\$54,139,363.42	\$57,173,812.14	.....	\$3,034,448.72
Fixed and Other Charges.				
Interest on Funded debt	\$17,855,927.12	\$16,879,476.71	\$976,450.41	.....
Miscellaneous rents	108,353.53	49,191.06	59,162.47	.....
Miscellaneous charges	421,878.12	322,938.50	98,939.62	.....
Total	\$18,386,158.77	\$17,251,606.27	\$1,134,552.50	.....
Net Income from All Sources	\$35,753,204.65	\$39,922,205.87	.....	\$4,169,001.22
DISPOSITION OF NET INCOME				
Dividends on Stock of Union Pacific Railroad Co.:				
Preferred stock:				
2 per cent paid April 1, 1924	\$1,990,870.00	.....	.....	.....
2 per cent paid October 1, 1924	1,990,870.00	\$3,981,740.00	\$3,981,740.00	.....
Common stock:				
2½ per cent paid April 1, 1924	\$5,557,290.00	.....	.....	.....
2½ per cent paid July 1, 1924	5,557,290.00	.....	.....	.....
2½ per cent paid October 1, 1924	5,557,290.00	.....	.....	.....
2½ per cent payable January 2, 1925	5,557,290.00	22,229,160.00	22,229,160.00	.....
Total Dividends	\$26,210,900.00	\$26,210,900.00	.....	.....
Sinking Fund Requirements	8,678.99	18,736.66	.....	\$10,057.67
Total Appropriations of Net Income	\$26,219,578.99	\$26,229,636.66	.....	\$10,057.67
Surplus, Transferred to Profit and Loss	\$9,533,625.66	\$13,692,569.21	.....	\$4,158,943.55

The "Net Income from all Sources" for the calendar year 1924, less sinking fund requirements and dividends on the preferred stock, amounted to \$31,762,785.66, and is equivalent to 14.29 per cent on the \$222,291,609 common stock of the Union Pacific Railroad Company outstanding, as compared with 16.16 per cent for the calendar year 1923, a decrease of 1.87 per cent.

[ADVERTISEMENT]

from States west of the Rocky Mountains due to damage to crops in that territory from late spring frosts and severe drought in 1924. The uncertain business conditions prevailing during most of the year throughout the country retarded building and construction activities and caused merchants and others to confine their purchases to actual and immediate requirements and this considerably reduced the movement of building and construction materials, manufactures and merchandise. Shipments of automobiles decreased substantially due to the fact that in 1923 the number of automobiles shipped to the Pacific Coast exceeded the anticipated demand and the excess cars were placed in storage for 1924 marketing, which was adversely affected by short crops in Pacific Coast States. Agricultural conditions in Kansas and Nebraska were good and the grain movement from these States was heavy, due to an exceptionally large crop of wheat and to the marketing of a large hold-over of 1923 wheat and corn occasioned by material advances in prices. There was substantial increase in the movement of kerosene, gasoline, naphtha and other refined petroleum oils occasioned by increased production of these products on our lines in Wyoming and Southern California.

The decrease of \$3,441,168.70 or 9.5% in "Passenger Revenue" was due to decrease of 7.5 per cent in revenue passengers carried one mile and to decrease of 2.4 per cent in average revenue per passenger mile occasioned principally by decrease in certain fares on the Los Angeles & Salt Lake Railroad ordered by the Interstate Commerce Commission, effective March 1, 1924. Revenue passengers carried decreased 15.9 per cent due to decrease in number of conventions held in the West, which lessened travel to Pacific Coast points; to a decline in travel occasioned by the smaller crops generally in the territory served by our lines; and to further diversion of local short-haul business to motor vehicles.

The decrease of \$1,215,393.29 or 3.9% in "Maintenance of Way

and Structures Expenses" was due partly to an unusual amount of track and drainage work in 1923 necessitated by excessive rains in that year and partly to ordinary fluctuations in renewals. The properties were fully maintained.

The principal track materials used during the year in making renewals were as follows:

New steel rails 331.59 track miles
Second-hand steel rails..... 110.26 track miles

Total 441.85 track miles

excluding yard tracks and sidings, equivalent to 4.3 per cent of the track miles in main track at the beginning of the year. Ties 3,129,555 (97.2 per cent treated), equivalent to 8.4 per cent of all ties in track at the beginning of the year. Tie plates 2,068,462 and continuous rail joints 218,373.

The decrease of \$4,552,816.59 or 10.9% in "Maintenance of Equipment Expenses" was due to heavy expenditures in 1923 to restore locomotives to the usual high state of efficiency below which they were at the end of the previous year as a result of the strike of mechanical employees which started July 1, 1922. Repairs were lessened also by the decline in traffic which caused less use of equipment—locomotive miles decreased 9.7 per cent, car miles 6.7 per cent and freight gross ton miles 5.8 per cent.

The increase of \$239,677.84 or 6.6% in "Traffic Expenses" was principally due to increase in expenditures for advertising and solicitation.

The decrease of \$5,292,972.52 or 8.1% in "Transportation Expenses—Rail Line" was principally due to decrease in volume of business handled and to increased average freight train load hauled. With decrease of only 5.8 per cent in freight gross ton miles, the total freight and mixed locomotive miles decreased 16.6 per cent

OPERATING RESULTS FOR YEAR 1924 COMPARED WITH YEAR 1923:

	Calendar Year 1924	Calendar Year 1923	Increase	Decrease	Per Cent
Average miles of road operated.....	9,510.23	9,482.56	27.67	.....	.3
OPERATING REVENUES					
1. Freight revenue	\$148,233,006.01	\$157,136,803.62	.....	\$8,903,797.61	5.7
2. Passenger revenue	32,635,301.50	36,076,470.20	.....	3,441,168.70	9.5
3. Mail revenue	4,613,520.33	4,556,941.57	\$56,578.76	.....	1.2
4. Express revenue	4,689,567.86	4,748,252.97	.....	58,685.11	1.2
5. Other passenger-train revenue.....	3,758,318.22	3,620,585.62	137,732.60	.....	3.8
6. Other train revenue.....	58,732.25	59,819.91	.....	1,087.66	1.8
7. Switching revenue	1,175,903.19	1,183,400.96	.....	7,497.77	.6
8. Water line revenue.....	73,800.62	50,407.39	23,393.23	.....	46.4
9. Other revenue	3,796,967.78	3,885,783.07	.....	88,815.29	2.3
10. Total operating revenues.....	\$199,035,117.76	\$211,318,465.31	.....	\$12,283,347.55	5.8
OPERATING EXPENSES					
11. Maintenance of way and structures.....	\$29,585,968.29	\$30,801,361.58	.....	\$1,215,393.29	3.9
12. Maintenance of equipment.....	37,153,620.04	41,706,436.63	.....	4,552,816.59	10.9
13. Total maintenance expenses.....	\$66,739,588.33	\$72,507,798.21	.....	\$5,768,209.88	8.0
14. Traffic expenses	3,884,546.85	3,644,869.01	\$239,677.84	.....	6.6
15. Transportation expenses—rail line.....	60,059,007.27	65,351,979.79	.....	5,292,972.52	8.1
16. Transportation expenses—water line.....	63,968.99	61,369.51	2,599.49	.....	4.2
17. Miscellaneous operations expenses.....	4,097,129.83	4,105,888.72	.....	8,758.89	.2
18. General expenses	6,835,214.33	6,737,959.08	97,255.25	.....	1.4
19. Transportation for investment—Credit.....	68,357.51	160,784.04	.....	92,426.53	57.5
20. Total operating expenses.....	\$141,611,098.09	\$152,249,080.27	.....	\$10,637,982.18	7.0
21. Revenues over expenses.....	\$57,424,019.67	\$59,069,385.04	.....	\$1,645,365.37	2.8
TAXES					
22. State and county.....	\$10,387,024.49	\$9,990,486.77	\$396,537.72	.....	4.0
23. Federal capital stock.....	592,126.02	589,607.98	2,518.04	.....	.4
24. Federal income	3,468,221.70	2,978,214.49	490,007.21	.....	16.5
25. Federal war revenue.....	10,343.22	14,757.39	.....	\$4,414.17	29.9
26. Total taxes	\$14,457,715.43	\$13,573,066.63	\$884,648.80	.....	6.5
27. Uncollectible railway revenues.....	\$29,681.31	\$21,783.69	\$7,897.62	.....	36.3
28. Railway operating income.....	\$42,936,622.93	\$45,474,534.72	.....	\$2,537,911.79	5.6
29. Equipment rents (debit).....	4,274,780.69	4,938,151.82	.....	663,371.13	13.4
30. Joint facility rents (debit).....	748,680.84	876,137.37	.....	127,456.53	14.5
31. Net railway operating income.....	\$37,913,161.40	\$39,660,245.53	.....	\$1,747,084.13	4.4
Per cent—Operating expenses of operating revenues.....	71.15	72.05	.....	.90	1.2
FREIGHT TRAFFIC (Commercial Freight only)					
Tons of revenue freight carried.....	31,503,788	30,820,137	683,651	.....	2.2
Ton-miles, revenue freight.....	11,786,735,981	11,916,697,715	.....	129,961,734	1.1
Average distance hauled per ton (miles).....	374.14	386.65	.....	12.51	3.2
Average revenue per ton-mile (cents).....	1.233	1.285	.....	.052	4.0
Average revenue per freight-train mile.....	\$6.99	\$6.26	\$73	.....	11.7
PASSENGER TRAFFIC (Excluding Motor Car)					
Revenue passengers carried	5,120,579	6,090,985	.....	970,406	15.9
Revenue passengers carried one mile.....	1,057,148,835	1,142,848,606	.....	85,699,771	7.5
Average distance hauled per passenger (miles).....	206.45	187.63	18.82	.....	10.0
Average passengers per passenger-train mile.....	56.69	60.73	.....	4.04	6.7
Average revenue per passenger-mile (cents).....	3.054	3.129	.....	.075	2.4
Average revenue per passenger-train mile, passengers only.....	\$1.73	\$1.90	.....	\$17	8.9
Average total revenue per passenger-train mile.....	\$2.43	\$2.59	\$16	6.2

Italics—Credit.

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General Balance Sheet—Assets

(Excluding all offsetting securities and accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Co.)

	December 31, 1924	December 31, 1923	Increase	Decrease
Investments:				
Road and equipment.....	\$846,137,843.43	\$826,808,565.54	\$19,329,277.89	.....
Less:				
Receipts from improvement and equipment fund.....	\$23,823,091.13	\$23,823,091.13	.....	.....
Appropriations from income and surplus prior to July 1, 1907, credited to this account.....	13,310,236.52	13,310,236.52	.....	.....
Total.....	\$37,133,327.65	\$37,133,327.65	.....	.....
701. Investment in road and equipment	\$809,004,515.78	\$789,675,237.89	\$19,329,277.89	.....
702. Improvements on Leased Railway Property.....	\$9,136.71	\$11,378.13	.....	\$2,241.42
704. Deposits in Lieu of Mortgaged Property Sold.....	195,243.90	1,172,655.54	.....	977,411.64
705. Miscellaneous Physical Property.....	2,319,434.28	3,064,944.54	.....	745,510.26
Total.....	\$2,523,814.89	\$4,248,978.21	.....	\$1,725,163.32
706. Investments in affiliated companies:				
Stocks.....	\$20,685,749.93	\$20,554,082.93	\$131,667.00	.....
Bonds, notes and equipment trust certificates.....	18,478,079.58	15,231,670.68	3,246,408.90	.....
Advances	8,735,449.80	9,222,698.79	.....	\$487,248.99
Total.....	\$47,899,279.31	\$45,008,452.40	\$2,890,826.91	.....
707. Investments in other companies:				
Stocks.....	\$90,105,478.35	\$85,999,253.40	\$4,106,224.95	.....
Bonds, notes and equipment trust certificates.....	79,565,211.24	82,261,647.32	.....	\$2,696,426.08
Total.....	\$169,670,689.59	\$168,260,890.72	\$1,409,798.87	.....
United States Government Bonds and Notes.....	\$34,356,863.75	\$38,315,145.00	.....	\$3,958,281.25
703. Sinking Funds	\$170,088.28	\$173,045.03	.....	\$2,956.75
Total Investments	\$1,063,625,251.60	\$1,045,681,749.25	\$17,943,502.35	.....
Current Assets:				
708. Cash	\$21,720,696.47	\$17,272,301.24	\$4,448,395.23	.....
711. Special Deposits	43,702.17	183,354.06	.....	\$139,651.89
712. Loans and Bills Receivable.....	47,186.86	17,535.37	29,651.49	.....
713. Traffic and Car Service Balances Receivable.....	4,310,665.70	5,994,496.60	.....	1,683,830.00
714. Net Balance Receivable from Agents and Conductors.....	1,221,340.24	1,536,615.12	.....	315,274.88
715. Miscellaneous Accounts Receivable.....	4,242,768.03	5,397,990.99	.....	1,155,222.96
716. Material and Supplies.....	19,048,220.67	23,676,833.31	.....	4,628,612.64
717. Interest and Dividends Receivable.....	1,723,433.84	1,716,265.36	7,168.48	.....
718. Rents Receivable.....	197,490.87	165,012.96	32,477.91	.....
719. Other Current Assets:				
Baltimore and Ohio Railroad Co. capital stock applicable to payment of extra dividend of 1914.....	170,674.20	179,622.20	.....	8,948.00
Miscellaneous items	224,627.95	121,774.68	102,853.27	.....
Total Current Assets.....	\$52,950,807.00	\$56,211,801.89	.....	\$3,260,994.89
Deferred Assets:				
720. Working Fund Advances.....	\$103,915.14	\$78,799.06	\$25,116.08	.....
722. Other Deferred Assets:				
Land contracts, as per contra.....	128,358.47	214,785.33	.....	\$86,426.86
Miscellaneous items	2,908,000.38	3,721,808.54	.....	813,808.16
Total Deferred Assets.....	\$3,140,273.99	\$4,015,392.93	.....	\$875,118.94
Unadjusted Debits:				
723. Rents and Insurance Premiums Paid in Advance.....	\$4,441.76	\$4,603.86	.....	\$162.10
725. Discount on Funded Debt.....	1,143,809.94	1,175,443.56	.....	31,633.62
727. Other Unadjusted Debits.....	1,784,768.46	1,627,868.84	\$156,899.62	.....
Total Unadjusted Debits.....	\$2,933,020.16	\$2,807,916.26	\$125,103.90	.....
Grand Total	\$1,122,649,352.75	\$1,106,716,860.33	\$15,932,492.42	.....

because of increase of 10.8 per cent in gross ton miles per freight train mile.

The increase of \$97,255.25 or 1.4% in "General Expenses" was principally due to increase in amount of premium payments on employees' group insurance.

The decrease of \$663,371.13 or 13.4% in "Equipment Rents (Debit)" was principally due to decrease in mileage payments on refrigerator cars, the number of carloads of perishable commodities handled having decreased because of the short crops of fruits and vegetables in the Northwestern States and California.

The increase in "Investment in Road and Equipment" is made up as follows:

Extensions and Branches.....	\$4,663,270.75
Additions and Betterments, excluding Equipment....	10,124,108.84
Equipment	6,331,424.17

Total Increase

From which there was deducted:

Cost of property retired from service and not to be replaced, charged (less salvage) to Profit and Loss in conformity with regulations of the Interstate Commerce Commission.....	\$352,844.66
Cost of real estate sold.....	57,412.46
Cost of equipment retired from service.....	1,379,268.75

Total Deductions

Net increase in "Investment in Road and Equipment"

In the report for 1921 advice was given of an arrangement to operate the Saratoga & Encampment Railroad from Walcott to Encampment, Wyoming, for a trial period of three years ending October 31, 1924, with option to purchase. There was a loss from operations during the trial period and, since no change in conditions could be foreseen, it was decided not to exercise the option to purchase. Realizing, however, the inconvenience to the public

[ADVERTISEMENT]

General Balance Sheet—Liabilities

(Excluding all offsetting securities and accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Co.)

	December 31, 1924	December 31, 1923	Increase	Decrease
751. Capital Stock:				
Common stock	\$222,293,100.00	\$222,293,100.00		
Preferred stock	99,543,500.00	99,543,500.00		
Total Capital Stock	\$321,836,600.00	\$321,836,600.00		
755. Funded Debt	415,732,450.00	413,586,595.00	\$2,145,855.00	
Total	\$737,569,050.00	\$735,423,195.00	\$2,145,855.00	
754. Grants in Aid of Construction	\$152,820.53	\$108,098.93	\$44,721.60	
Current Liabilities:				
759. Traffic and Car Service Balances Payable	\$1,295,560.48	\$1,550,827.77		\$255,267.29
760. Audited Accounts and Wages Payable	11,292,833.26	13,331,932.88		2,039,099.62
761. Miscellaneous Accounts Payable:				
Due to affiliated companies	9,652,813.99	9,988,685.53		335,871.54
Other accounts payable	201,167.83	224,921.39		23,753.56
762. Interest Maturity Unpaid:				
Coupons matured, but not presented	161,338.35	193,753.05		32,414.70
Coupons, and interest on registered bonds, due first proximo	5,082,083.78	5,082,832.40		748.62
763. Dividends Maturity Unpaid:				
Dividends due, but uncalled for	116,115.50	106,807.50	\$9,308.00	
Extra dividend on common stock declared January 8, 1914, payable to stockholders of record March 2, 1914, unpaid	183,548.33	192,741.49		9,193.16
Dividend on common stock payable first proximo	5,557,299.00	5,557,290.00		9,000.00
764. Funded Debt Matured Unpaid	5,000.00	8,000.00		3,000.00
766. Unmatured Interest Accrued	1,693,446.73	1,658,423.09	\$35,023.64	
767. Unmatured Rents Accrued	427,826.48	478,833.80		51,007.32
768. Other Current Liabilities	166,170.66	1,022,627.51		856,456.85
Total Current Liabilities	\$35,835,195.39	\$39,397,676.41		\$3,562,481.02
Deferred Liabilities:				
770. Other Deferred Liabilities:				
Principal of deferred payments on land contracts, as per contra	\$128,358.47	\$214,785.33		\$86,426.86
Contracts for purchase of real estate	1,660,000.00	1,660,000.00		
Miscellaneous items	7,853,465.50	8,033,928.69		180,463.19
771. Tax Liability	9,368,836.03	8,727,888.41	\$640,947.62	
Total Deferred Liabilities	\$19,010,660.00	\$18,636,602.43	\$374,057.57	
Unadjusted Credits:				
773. Insurance Reserve:				
Reserve for fire insurance	\$1,621,825.68	\$1,391,535.83	\$230,289.85	
776. Reserve for Depreciation	50,874,366.88	46,128,288.26	4,746,078.62	
779. Other Unadjusted Credits:				
Contingent interest	707,943.84	678,366.09	29,577.75	
Miscellaneous items	3,356,554.52	3,316,581.81	39,972.71	
Total Unadjusted Credits	\$56,560,690.92	\$51,514,771.99	\$5,045,918.93	
Total Liabilities	\$849,128,416.84	\$845,080,344.76	\$4,048,072.08	
Surplus:				
Appropriated for Additions and Betterments	\$29,732,252.27	\$29,393,716.03	\$338,536.24	
Reserved for Depreciation of Securities	34,740,468.50	34,740,468.50		
Funded Debt Retired Through Income and Surplus	526,795.33	496,413.80	30,381.53	
Sinking Fund Reserves	176,973.49	190,317.40		\$13,343.91
Total Appropriated Surplus	\$65,176,489.59	\$64,820,915.73	\$355,573.86	
784. Profit and Loss—Credit Balance	\$176,671,078.41	\$167,143,109.54	\$9,527,968.87	
Total Surplus	\$241,847,568.00	\$231,964,025.27	\$9,883,542.73	
As this consolidated balance sheet excludes all intercompany items, securities of the Los Angeles & Salt Lake Railroad Company owned by other System companies are not included. The difference between the par and face value of such securities as carried on the books of the Los Angeles & Salt Lake (less unextinguished discount on the bonds and discount charged to Profit and Loss, but added back in consolidating the accounts) and the amounts at which the securities are carried on the books of the owning System companies is set up here to balance.	\$31,673,367.91	\$31,672,490.30	\$877.61	
Grand Total	\$1,122,649,352.75	\$1,108,716,860.33	\$13,932,492.42	

†These amounts respectively represent donations made during the year by counties and municipalities and by individuals and companies in part payment for improvements, such as road crossings, drainage projects, and industry spur tracks, the cost of which was charged to "Investment in Road and Equipment."

which would result from abandonment of this line, offer was made to the owners to continue operation thereof for a further period of three years but without payment of rental. The offer was not accepted by the owners and the Union Pacific therefore ceased operation of the property and returned it to them on October 31st.

An extension of the Fort Collins Branch from Fort Collins northerly 17.07 miles to Buckeye, Colorado, was constructed and opened to the public for traffic on September 1, 1924. This extension will serve an area containing 40,400 acres, of which 15,000 are in pasture and 25,400 under cultivation and irrigation. The soil in this area is rich and well adapted to the raising of grain, potatoes and sugar beets, and it is expected that the new extension will intensify and develop farming and stock raising. Natural gas and oil have been discovered in the territory served by this branch and the development of this industry is in progress.

An extension of the Oregon Eastern Branch from Crane northerly a distance of 30.03 miles to Burns, Oregon, was constructed and placed in operation December 24, 1924. This extension serves a territory heretofore without immediate railroad facilities and was built primarily to provide facilities to transport lumber from the Malheur National Forest. A lumber company

has acquired rights to develop an area in this forest and is building a mill at Burns with an annual capacity of 75,000,000 feet B.M. and is also constructing a logging railroad from Burns northerly into the timber land to Seneca, a distance of 50 miles. Including the area to be reached through the construction of the logging road, the territory to be served contains approximately 1,445,500 acres, of which 700,000 are in timber, 610,000 in waste or range land, 10,500 under cultivation, 80,000 in meadow and 45,000 arid land which can be reclaimed.

A small branch line was constructed jointly with the Walla Walla Valley Railway Co., a subsidiary of the Northern Pacific Railway Co., from Prunedale westerly a distance of 3.62 miles through cultivated orchards and pasture lands to Umapine, Oregon. The area to be served by this branch contains approximately 20,000 acres, of which 7,000 are in pasture and 13,000 are under cultivation. The branch was opened for operation on July 11, 1924.

Construction of the extension from Ammon, Idaho, southwesterly to a connection with the northern end of the Dumas Branch was completed and placed in operation June 1, 1924. Construction work was continued on the branch lines from Rogerson, Idaho, to Wells, Nevada, and from Orchard to Boise, Idaho.

[ADVERTISEMENT]

Annual Report—Missouri-Kansas-Texas Railroad Company

and Controlled Companies

For the Year Ended December 31, 1924

St. Louis, Mo., March 25, 1925.

TO THE STOCKHOLDERS:

The Board of Directors submit herewith report of the operations and affairs for the year ended December 31, 1924.

A summary of results of operation for the year compared with the year 1923, is as follows:

Operating Revenues were.....	\$57,309,345.03
(Increase, \$1,321,426.95 or 2%)	
Operating Expenses were.....	\$39,732,034.69
(Decrease, \$3,896,284.26 or 9%)	
Net Operating Revenue was.....	\$17,577,310.34
(Increase, \$5,217,711.21 or 42%)	
Taxes were.....	\$3,215,686.65
(Increase, \$628,225.53 or 24%)	
Operating Income, Taxes Deducted, was.....	\$14,361,623.69
(Increase, \$4,589,485.68 or 47%)	
Miscellaneous Income was.....	\$255,361.75
(Decrease, \$1,072,203.12 or 81%)	
	\$14,616,985.44
Rentals and Other Payments were.....	\$1,592,507.10
(Increase, \$674,472.77 or 73%)	
Income for the Year Available for Interest was.....	\$13,024,478.34
(Increase, \$2,842,809.79 or 28%)	
Fixed Interest Charges for year were.....	\$4,725,955.28
(Decrease, \$56,018.38 or 1%)	
Balance available for Interest on Adjustment Bonds was.....	\$8,298,523.06
Interest on Adjustment Bonds was.....	\$2,790,085.35
(Decrease, \$928.29 or .03%)	
Balance	\$5,508,437.71

Financial

No additional amounts of capital stock or funded debt have been authorized during the year. Of the securities authorized to be issued in exchange for the property at the time of reorganization there have thus far been issued and are now outstanding in the hands of the public the following:

Common Stock (no par value).....	806,755 Shares
Preferred Stock, Series "A" (7% cumulative after January 1, 1923)	\$24,265,900.00
Prior Lien Mortgage 5% Series "A" Bonds.....	36,617,929.30
Prior Lien Mortgage 4% Series "B" Bonds.....	11,493,250.00
Prior Lien Mortgage 6% Series "C" Bonds.....	12,894,570.00
Adjustment Mortgage 5% Series "A" Bonds.....	55,809,663.74

There are additional amounts of these securities in the hands of the Reorganization Managers, to be used for the purposes of the reorganization and so far as not used, to be returned to the Company.

In addition to the above there were outstanding in the hands of the public on December 31, 1924, \$32,572,100 underlying bonds and equipment obligations left undisturbed in the reorganization; also, \$4,750,000 Secured Gold Notes issued as of March 1, 1924, in substitution for a like amount of United States Government Loans issued in June, 1923. The \$4,750,000 Secured Gold Notes were called for redemption and paid March 2, 1925.

Underlying bonds and equipment obligations left undisturbed in the reorganization amounting to \$2,403,600 were paid and retired during the year and \$35,000 were exchanged for Prior Lien Bonds.

An initial dividend of 1/4 per cent on the Preferred Stock, Series "A" was, on December 15, 1924, declared out of the surplus of the Company, payable on February 2, 1925.

Rolling Stock

A large number of units were rebuilt in the Company shops. Expenditures for improvements to existing equipment were \$445,455.48. The value of the equipment replacements during the year, less retirements, was \$88,201.59. Adjustment of charges on equipment received in previous years resulted in a net credit of \$6,337.03. The net increase in the value of equipment owned is \$647,098.98.

Operations

The mileage operated on December 31, 1924, was 3,188.45 compared with 3,202.55 on December 31, 1923, a decrease of 14.10 miles. The line between Atoka and Coalgate, Oklahoma, 13.98 miles, was leased to the Oklahoma City-Ada-Atoka Railway Company during the year.

Both passenger and freight service have been maintained at a high standard. While the decrease in passenger revenues as compared with the preceding year has been due primarily to the diversion of local traffic to automobile and bus service, there has been no decrease in through travel.

The number of tons of revenue freight carried one mile increased 10 per cent while the revenue per ton mile of revenue freight decreased 3.5 per cent. Had the same revenue per ton per mile obtained during the year as was received in the previous year the freight revenue would have been increased \$1,534,473.

Service was maintained throughout the year without serious interruption with the exception of a few days in December, during which the service was badly demoralized by the storm which seriously crippled telegraph and telephone communication in the entire Southwest.

The property has been well maintained during the year and tracks, structures and rolling stock are in good condition.

Missouri-Kansas-Texas Lines

Income Account

YEAR ENDED DECEMBER 31, 1924, COMPARED WITH YEAR ENDED DECEMBER 31, 1923

	1924	1923	Increase or Decrease
Average Mileage Operated..	3,193.14	3,359.76	—166.62
Operating Revenue:			
Freight	\$42,331,704.74	\$39,791,214.67	\$2,540,490.07
Passenger	10,457,070.86	11,295,456.27	—838,385.41
Mail	1,189,965.90	1,221,101.46	—31,135.56
Express	1,827,782.55	2,181,233.24	—353,450.69
Miscellaneous	665,305.33	637,146.76	28,158.57
Incidental	791,351.94	788,633.92	2,718.02
Joint Facility.....	46,163.71	73,131.76	—26,968.05
Total Operating Revenue...	\$57,309,345.03	\$55,987,918.08	\$1,321,426.95
Operating Expenses:			
Maintenance of Way and Structures	\$7,563,137.47	\$7,393,307.28	\$169,830.19
Maintenance of Equipment..	11,517,474.98	14,636,724.26	—3,119,249.28
Traffic Expenses	1,138,962.06	1,151,353.02	—12,390.96
Transportation Expenses	17,363,774.08	18,380,268.53	—1,016,494.45
Miscellaneous Operations...	381,099.49	362,232.53	18,866.96
General Expenses	1,919,776.74	2,053,373.25	—133,596.51
Transportation for Investment—Cr.	152,190.13	348,939.92	196,749.79
Total Operating Expenses..	\$39,732,034.69	\$43,628,318.95	—\$3,896,284.26
Net Operating Revenue....	\$17,577,310.34	\$12,359,599.13	\$5,217,711.21
Railway Tax Accruals.....	\$3,215,686.65	\$2,587,461.12	\$628,225.53
Uncollectible Railway Revenues	31,403.55	26,091.57	5,311.98
Total	\$3,247,090.20	\$2,613,552.69	\$633,537.51
Total Operating Income...	\$14,330,220.14	\$9,746,046.44	\$4,584,173.70
Non-Operating Income:			
Rent from Locomotives....	\$62,917.76	\$120,946.32	—\$58,028.56
Rent from Passenger Train Cars	149,698.44	169,516.25	—19,817.81
Rent from Work Equipment..	40,459.62	38,188.69	2,270.93
Joint Facility Rent Income..	140,931.18	177,901.72	—36,970.54
Income from Lease of Road..	138,230.81	61,273.12	76,957.69
Miscellaneous Rent Income..	99,717.69	58,211.70	41,505.99
Miscellaneous Non-Operating Physical Property	10,162.47	18,051.75	—28,214.22
Dividend Income	700.00	8,000.00	—7,300.00
Income from Funded Securities	130,782.27	322,293.09	—191,510.82
Income from Unfunded Securities and Accounts.....	121,349.78	275,823.69	—154,473.91
Miscellaneous Income	2,529.70	703,396.34	—700,866.64
Total Non-Operating Income	\$877,154.78	\$1,953,602.67	—\$1,076,447.89
Gross Income	\$15,207,374.92	\$11,699,649.11	\$3,507,725.81
Deductions from Gross Income:			
Hire of Freight Cars—Debit Balance	\$1,069,243.38	\$519,500.86	\$549,742.52
Rent for Locomotives.....	30,501.11	24,493.77	6,007.34
Rent for Passenger Train Cars	75,625.41	90,133.88	—14,508.47
Rent for Work Equipment..	193,518.14	8,636.22	184,881.92
Joint Facility Rents.....	767,841.52	800,245.39	—32,403.87
Rent for Leased Roads.....	7,661.40	9,701.40	—2,040.00
Miscellaneous Rents	2,244.68	1,332.87	911.81
Miscellaneous Tax Accruals..	6,072.93	4,599.35	1,473.58
Interest on Unfunded Debt..	28,637.38	57,503.74	—28,866.36
Miscellaneous Income Charges	1,550.63	1,743.08	—192.45
Total Deductions from Gross Income	\$2,182,896.58	\$1,517,980.56	\$664,916.02
Balance Available for Interest	\$13,024,478.34	\$10,181,668.55	\$2,842,809.79
Fixed Interest Charges.....	4,725,955.28	4,781,973.66	—56,018.38
Balance Available for Interest on Adjustment Bonds..	\$8,298,523.06	\$5,399,694.89	\$2,898,828.17
Interest on Adjustment Bonds	2,790,085.35	2,791,013.64	—928.29
Balance	\$5,508,437.71	\$2,608,681.25	\$2,899,756.46

Italics denote Debit.

[ADVERTISEMENT]

Missouri-Kansas-Texas Lines—Consolidated General Balance Sheet

Assets	December 31, 1924	December 31, 1923	Increase or Decrease	Liabilities	December 31, 1924	December 31, 1923	Increase or Decrease
INVESTMENTS:				Stock:			
Investment in Road and Equipment:				Capital Stock:			
Road	\$224,773,231.92	\$222,383,018.18	\$2,390,213.74	Preferred	\$30,000,000.00	\$30,000,000.00	.....
Equipment	48,656,338.06	48,009,239.08	647,098.98	Common	82,420,000.00	82,420,000.00	.....
	\$273,429,569.98	\$270,392,257.26	\$3,037,312.72	Total Stock	\$112,420,000.00	\$112,420,000.00	.....
Improvements on Leased Rail-way Property	8,552.87	7,959.96	592.91	LONG TERM DEBT:			
Sinking Funds	588.83	43.75	545.08	Mortgage Bonds	\$102,274,999.00	\$101,732,899.80	\$542,100.00
Deposits in Lieu of Mortgaged Property Sold	75,187.94	837.64	74,350.30	Equipment Trust Obligations	925,100.00	1,077,200.00	—152,100.00
Miscellaneous Physical Property	556,048.93	552,027.89	4,021.04	*Collateral Trust Bonds	4,750,000.00	.....	4,750,000.00
Investments in Affiliated Companies—Pledged	529,001.00	529,001.00	.....	United States Government Loans .....	.....	5,140,000.00	—5,140,000.00
Investments in Affiliated Companies—Unpledged	61,007.17	.....	61,007.17	Income Mortgage Bonds	57,500,000.00	57,500,000.00	.....
Other Investments:				Total Long Term Debt	\$165,450,099.00	\$165,450,099.00	.....
United States Government Securities	5,034,156.25	3,195,156.25	1,839,000.00	CURRENT LIABILITIES:			
Other Securities	667,697.09	.....	667,697.09	Traffic and Car Service Bal-ances Payable	\$1,431,309.96	\$1,296,603.69	\$134,706.27
Total Investments	\$280,361,810.06	\$274,677,283.75	\$5,684,526.31	Audited Accounts and Wages Payable	4,216,274.89	4,904,357.61	—688,082.72
CURRENT ASSETS:				Miscellaneous Accounts Pay-able	182,308.92	167,367.35	14,941.57
Cash	\$3,356,936.44	\$2,505,811.77	\$851,124.67	Interest Matured Unpaid	1,924,012.71	2,082,841.51	—158,828.80
Time Drafts and Deposits	2,195,241.59	200,000.00	1,995,241.59	Funded Debt Matured Un-ail	1,000.00	13,000.00	—12,000.00
Special Deposits	9,643.24	11,293.76	—1,650.52	Unmatured Dividends De-clared	306,261.25	.....	306,261.25
Loans and Bills Receivable	10,152.81	23,730.27	—13,577.46	Unmatured Interest Accrued	1,626,556.00	1,658,729.81	—32,173.81
Traffic and Car Service Bal-ances Receivable	709,202.56	775,082.20	—65,879.64	Unmatured Rents Accrued	90,292.09	107,109.67	—16,817.58
Net Balance Receivable from Agents and Conductors	1,471,567.01	1,126,575.43	344,991.58	Other Current Liabilities	466,543.02	243,513.89	223,029.13
Miscellaneous Accounts Re-ceivable	1,398,860.38	2,343,131.36	—944,270.98	Total Current Liabilities	\$10,244,558.84	\$10,473,523.53	—\$228,964.69
Material and Supplies	6,353,075.00	8,059,484.01	—1,706,409.01	DEFERRED LIABILITIES:			
Interest and Dividends Re-ceivable	58,953.12	23,619.78	35,333.34	Other Deferred Liabilities	\$206,228.84	\$78,171.52	\$128,057.32
Rents Receivable	55.00	132.00	—77.00	UNADJUSTED CREDITS:			
Other Current Assets	147,015.87	116,476.29	30,539.58	Tax Liability	\$2,179,246.48	\$1,128,310.66	\$1,050,935.82
Total Current Assets	\$15,710,703.02	\$15,185,336.87	\$525,366.15	Insurance and Casualty Re-serves	279.30	162.30	117.00
DEFERRED ASSETS:				Accrued Depreciation—Equip-ment	2,463,600.00	1,161,373.72	1,302,226.28
Working Fund Advances	\$80,377.16	\$77,546.50	\$2,830.66	Other Unadjusted Credits	1,339,246.94	1,799,462.24	—460,215.30
Other Deferred Assets	3,001.00	9,000.00	—5,999.00	Total Unadjusted Credits	\$5,982,372.72	\$4,089,308.92	\$1,893,063.80
Total Deferred Assets	\$83,378.16	\$86,546.50	—\$3,168.34	CORPORATE SURPLUS:			
UNADJUSTED DEBITS:				Additions to Property through Income and Surplus	\$27,260.02	\$15,353.28	\$11,906.74
Rents and Insurance Pre-miums Paid in Advance	\$90,745.66	\$93,907.79	—\$3,162.13	Profit and Loss—Balance	7,409,790.58	2,287,750.83	5,122,039.75
Other Unadjusted Debits	409,442.46	421,614.42	—12,171.96	Total Corporate Surplus	\$7,437,050.60	\$2,303,104.11	\$5,133,946.49
Reorganization Suspense	5,084,232.64	4,349,517.75	734,714.89	Total	\$301,740,310.00	\$294,814,207.08	\$6,926,102.92
Total Unadjusted Debits	\$5,584,418.76	\$4,865,039.96	\$719,378.80				
Total	\$301,740,310.00	\$294,814,207.08	\$6,926,102.92				

Note:

The following Securities not included in Balance Sheet Accounts:

Securities Issued or Assumed—Pledged

Note—Intercorporate Assets and Liabilities are excluded.

Note:

The following Capital Liabilities not included in Balance Sheet Accounts:

Long Term Debt—Pledged

Note—Intercorporate Assets and Liabilities are excluded.

The Company is guarantor, jointly with other Companies, of the securities of certain terminal companies, none of which are in default.

The above Capital Liabilities include stock and bonds, issued under the Plan and Agreement for Reorganization, dated November 1, 1921; unused balance to be returned to the Company by the Reorganization Managers.

*Called for payment March 2, 1925.

Missouri-Kansas-Texas Lines—Operating Revenues and Expenses—For 10 Years Ended Dec. 31, 1924

	Average Mileage Operated	Revenues						
	Freight	Passenger	Mail	Express	Miscellaneous	Other	Total	
1915	3,865.07	\$22,142,576.03	\$7,966,913.35	\$770,382.12	\$858,629.05	\$267,702.92	\$447,258.98	\$32,453,462.45
1916	3,865.02	24,795,719.61	9,215,627.16	783,675.57	1,055,446.23	331,073.57	552,140.14	36,733,682.28
1917	3,866.31	29,027,903.37	11,160,922.06	796,848.22	1,239,934.08	426,765.48	691,777.18	43,344,150.39
1918	3,860.88	35,754,940.45	14,715,178.42	765,503.13	1,623,472.00	489,494.21	790,210.76	54,138,798.97
1919	3,838.66	41,283,105.84	16,709,710.51	715,238.82	1,609,690.09	416,308.03	1,091,323.00	61,825,376.29
1920	3,793.42	47,363,850.89	19,378,120.16	2,286,746.68	1,899,966.98	794,557.53	1,191,494.82	72,914,737.06
1921	3,783.69	43,782,692.09	13,904,679.97	1,356,041.38	2,102,426.33	779,656.03	1,095,479.65	63,020,975.45
1922	3,737.46	39,198,400.88	10,958,411.71	1,241,950.01	2,130,755.79	620,380.79	885,802.71	55,035,701.89
1923	3,359.76	39,791,214.67	11,295,456.27	1,221,101.46	2,181,233.24	637,146.76	861,765.68	55,987,918.08
1924	3,193.14	42,331,704.74	10,457,070.86	1,189,965.90	1,827,782.55	665,305.33	837,515.65	57,309,345.03
	Expenses							
	Maintenance of Way and Structures	Maintenance of Equipment	Traffic	Transportation Expenses	General and Other	Total	Net Revenue	
1915	\$5,277,655.26	\$4,657,976.77	\$658,522.72	\$11,494,484.95	\$1,135,176.59	\$23,223,816.29	\$9,229,646.16	
1916	7,635,694.93	7,273,803.80	725,564.02	12,400,520.85	1,404,117.14	29,439,700.74	7,293,981.54	
1917	6,353,665.13	8,737,922.08	786,979.55	15,672,561.22	1,594,982.61	33,146,110.59	10,198,039.80	
1918	9,539,254.15	12,630,284.39	582,149.43	22,377,510.36	2,199,835.07	47,329,033.40	6,809,765.57	
1919	12,124,064.16	14,814,834.52	657,119.63	26,876,430.00	2,514,447.24	56,986,895.55	4,838,480.74	
1920	16,422,652.00	17,378,345.36	978,596.39	32,014,151.75	3,087,133.40	69,880,878.90	3,033,858.16	
1921	9,835,638.33	13,803,427.26	1,064,545.36	22,866,804.76	2,485,368.60	50,055,784.31	12,965,191.14	
1922	7,237,276.60	10,548,094.49	1,041,435.68	18,780,007.03	2,076,887.24	39,683,701.04	15,352,000.85	
1923	7,393,307.28	14,636,724.26	1,151,353.02	18,380,268.53	2,066,665.86	43,628,318.95	12,359,599.13	
1924	7,563,137.47	11,517,474.98	1,138,962.06	17,363,774.08	2,148,686.10	39,732,034.69	17,577,310.34	
	Ratio to Total Revenue							
	Maintenance of Way and Structures	Maintenance of Equipment	Traffic	Transportation Expenses	General and Other	Total	Net Revenue	
1915	16.26	14.35	2.03	35.42	3.50	71.56	28.44	
1916	20.79	19.80	1.98	33.75	3.82	80.14	19.86	
1917	14.66	20.16	1.81	36.16	3.68	76.47	23.53	
1918	17.62	23.33	1.07	41.34	4.06	87.42	12.58	
1919	19.61	23.96	1.06	43.47	4.07	92.17	7.83	
1920	22.52	23.84	1.34	43.91	4.23	95.84	4.16	
1921	15.61	21.90	1.69	36.28	3.95	79.43	20.57	
1922	13.15	19.17	1.89	34.13	3.77	72.11	27.89	
1923	13.20	26.14	2.06	32.83	3.70	77.93	22.07	
1924	13.20	20.10	1.99	30.30	3.74	69.33	30.67	

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Additions to Property

Expenditures for additions to road aggregated \$2,390,213.74. The principal improvement completed during the year was the relaying of 51.64 miles of main line on the Kansas City Division with new 90-pound rail, completing the program for rail renewal between Parsons and Paola, Kan. Thirty-five miles of the relay 85-pound rail taken from the Kansas City Division was laid on the Henrietta Division between Lindsay and Nocona, Texas. This completes the relaying of the entire line from Whitesboro to Wichita Falls, Texas, with 85-pound rail.

A new freight storage warehouse was completed at Dallas, Texas, at a cost of approximately half million dollars. This facility has been leased to the Interstate Forwarding Company and should attract substantial traffic to our Lines.

General

In July, 1924, your Company arranged for the purchase in the market of approximately \$650,000 par value of its Adjustment Mortgage 5 per cent Series "A" Bonds, which were offered to employees on an installment purchase plan at \$560 per \$1,000 bond.

The idea was to interest your employees in a financial way in the welfare of the Company. The response to this offer was greater than was anticipated, 1,415 employees having subscribed for an amount totaling \$800,300 par value of bonds, by the date on which subscriptions were closed. Therefore, it was necessary to eliminate the subscriptions made by the general officers and reduce other subscriptions in excess of \$1,500 per individual in order to bring the distribution of the bonds within the amount available.

Final settlement was concluded with the Interstate Commerce Commission, during the year, covering the guaranty to the Receiver of net income for the six months ended August 31, 1920, under provisions of Section 209 of the Transportation Act, 1920.

Federal valuation of the properties by the Interstate Commerce Commission, with the cooperation and assistance of the Officers of the Company, has progressed during the year. It is impossible to state at this time how soon the Interstate Commerce Commission will complete its valuation.

The officers and employees are especially commended for their faithful and efficient services during the past year.

C. E. SCHAFF, President.

Twenty-Seventh Annual Report of Reading Company for the Year Ended December 31, 1924

Philadelphia, Pa., April 15, 1925.

To the Stockholders of Reading Company:

The Board of Directors submits herewith its 27th Annual Report, being the first report of the operations of the Company as a Common Carrier.

The income for the year ended December 31, 1924, as compared with the combined income for the year 1923, of the several companies merged December 31, 1923, into Reading Company, was as follows:

	1924	1923
Railway Operating Revenues	\$92,088,258.39	\$105,807,431.40
Railway Operating Expenses	70,306,556.23	76,758,908.99
Net Revenue from Railway Operations	\$21,781,702.16	\$29,048,522.41
Railway Tax Accruals	\$4,284,017.70	\$4,952,591.95
Uncollectible Railway Revenues	6,010.17	26,239.44
Total Taxes and Uncollectible Ry. Revenues	\$4,290,027.27	\$4,978,831.89
Total Operating Income	\$17,491,674.87	\$24,069,691.02
Non-Operating Income	1,476,066.98	2,585,734.36
Net Railway Operating Income	\$18,967,741.27	\$26,655,425.38
Other Non-Operating Income	4,668,775.56	\$7,457,822.98
Gross Income	\$23,636,516.83	\$34,113,248.36
Deductions from Gross Income	8,515,200.68	8,727,077.32
Net Income	\$15,121,316.15	\$25,386,171.04
Income Appropriated for Investment in Physical Property	\$3,577,343.23	\$3,217,332.28
Income Appropriated for Sinking Fund and Reserve Funds	47,031.17	48,914.35
Total Appropriations of Income	\$3,624,374.40	\$3,266,246.63
Income Balance Transferred to Profit and Loss	\$11,496,941.75	\$22,119,924.41

* Includes \$3,000,000 special dividend received from the Reading Iron Co. in connection with the segregation of the Coal and Iron properties.

Additions and Betterments

During the fiscal year ended December 31, 1924, the sum of \$7,641,442.44 (of which \$6,697,343.23 was charged to income or surplus) was expended by Reading Company in additions and betterments to its road and equipment.

The expenditures in 1924 are classified as follows:

Engineering	\$82,401.17
Land for transportation purposes	45,204.50
Grading	266,448.56
Tunnels and subways	58,883.80
Bridges, trestles and culverts	117,879.06
Ties	28,260.49
Rails	432,729.39
Other track material	420,600.97
Ballast	8,813.34
Track laying and surfacing	28,742.31
Right-of-way fences	1,645.72
Snow and sand fences and snowsheds	199.72
Crossings and signs	166,152.03
Station and office buildings	332,969.77
Roadway buildings	42,126.56
Water stations	22,097.19
Fuel stations	177,052.15
Shops and enginehouses	151,965.19
Wharves and docks	1,919.79
Coal and ore wharves	341,900.67

Telegraph and telephone lines	\$2,361.91
Signals and interlockers	14,788.25
Power plant buildings	50,701.38
Power substation buildings	746.39
Power transmission systems	18,734.75
Power distribution systems	54,716.86
Power line poles and fixtures	5,701.83
Miscellaneous structures	100,166.33
Paving	758.39
Roadway machines	20,008.04
Roadway small tools	129.91
Assessments for public improvements	19,897.73
Shop machinery	16,314.86
Power plant machinery	248,024.45
Power substation apparatus	13.56

Total expenditures for road.....\$3,307,217.44

Steam locomotives	\$986,049.83
Freight-train cars	2,531,251.97
Passenger-train cars	878,304.17
Floating equipment	274,573.81
Work equipment	158,435.09
Miscellaneous equipment	9,636.91

Total expenditures for equipment.....\$4,289,104.16

Interest during construction.....\$45,120.84

Grand Total.....\$7,641,442.44

BETHLEHEM, PA.

The Hill-to-Hill Bridge crossing the Lehigh River, mentioned in earlier reports, a portion of the cost of construction of which was borne by Reading Company and its predecessor, the Philadelphia and Reading Railway Company, was completed on November 1, 1924. This bridge crosses overhead the tracks of the several railroads entering Bethlehem, thus eliminating the dangerous grade crossings which formerly existed at that point.

Reading Company and the Lehigh Valley Railroad Company are jointly constructing a new Union Passenger Station to replace the obsolete station facilities now in use.

HARRISBURG, PA.

The double track concrete bridge over the Susquehanna River, referred to in previous reports, was completed and the entire bridge thrown open to traffic on June 17, 1924.

PHILADELPHIA, PA.

The new pier and car dumper at the Port Richmond freight terminal, required to handle the heavy coal traffic entering the terminal for transfer to vessels, were completed and placed in service on December 31, 1924.

On December 30, 1924, Reading Company opened its new station at Fern Rock. This station serves a rapidly growing residential district of Philadelphia.

PORT CLINTON, PA.

Work was commenced during the year on the change of alignment of the railroad at this point. Through a change in the channel of the Schuylkill River and in the alignment of the railroad, two existing bridges over the Schuylkill River and use of the Port Clinton Tunnel will be eliminated. The roadbed will be widened sufficiently to provide for an additional south bound main track.

PRESCOTT, PA.

In order to handle more expeditiously the movements of limestone over the Lebanon Valley Branch, work was commenced

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during the year 1924 on the construction of an enlarged yard at Prescott for the classification of this commodity.

READING, PA.

An extension to the office building occupied by the clerical forces employed in the Motive Power Department was under construction and practically completed at the close of the year.

RINGTOWN, PA.

Work on the change of the alignment of the Catawissa Railroad and the filling in of the high trestle, referred to in the 1923 report, progressed during the year. Through the construction of large culverts over the public highway and the Little Catawissa Creek, the elimination of the steel trestle, a grade crossing and a reduction in the curvature of the road will be accomplished. It is anticipated that this project will be completed in 1926.

RUTHERFORD, PA.

Work on the new coaling station, referred to in the 1923 report, continued during the year. This project involves the construction of a 2,000 ton capacity reinforced concrete coaling station, inspection pits, ash pits, crane runway and water supply.

Expenditures were also made during the year 1924 upon the following principal improvements, some of which were begun prior to 1924:

- Replacing drawbridge at Darby Creek.
- Replacing bridge 61/87 south of Tuckerton.
- Replacing overhead bridge 3/05 west of Wyomissing.
- Replacing bridge 75/33 north of Hamburg.
- Replacing bridge 2 at Allentown.
- Replacing bridge 3 at Allentown.
- Replacing bridge 10/24 at North Market Street, Chester.
- Reconstruction of bridge 0/18 east of Conshohocken.
- Reconstruction of bridge 0/28 east of Girardville.
- Reconstruction of bridge 36/09 at Perkaspie.
- New machine shop at St. Clair.
- Alterations Railway Postoffice at Reading Terminal, Philadelphia.
- Ventilating system in Mahanoy Tunnel.
- Installing one 1000 horse power steam boiler, power house, Pier 14 at Port Richmond, Phila.
- Installing 6" high pressure fire control system at Port Richmond, Phila.
- Replacing crane, freight yard at 23rd and Arch Streets, Philadelphia.
- New petroleum tanks, Port Reading Creosoting Plant.
- Replacing track scale at Mahanoy Plane.
- New water station at Mount Carbon.
- Replacing five stationary boilers at Mahanoy Plane.
- Constructing road connecting Ashland Avenue with Belmont Avenue at West Manayunk.

Elimination of Grade Crossings

Reading Company is continuing its policy of eliminating grade crossings as rapidly as conditions permit.

Notable in this connection was the elimination of the crossings at Broadhead Avenue and at Wyandotte Street, Bethlehem, through the construction and opening of the new Hill-to-Hill bridge.

Work was in progress at the close of the year 1924 on the construction of an overhead highway bridge, No. 34/60, at Susquehanna Avenue, Allentown, to eliminate the grade crossing at Coopersburg Pike. The new overhead highway bridge south of Elkins Park Station and the footbridge over the tracks on the line of Prospect Avenue, between Oak Lane and Elkins Park, were completed in February, 1924. Work was also in progress on the construction of a footway tunnel under the tracks at Ashbourne Road. Through these improvements the hazardous grade crossing at Ashbourne Road, south of Elkins Park Station, has been eliminated.

On the Atlantic City Railroad, seven grade crossings in the City of Camden, New Jersey, were eliminated through the construction of the new Camden Terminal and the relocation of the terminal facilities. The grade crossing at Middletown, N. J., was in process of elimination through the construction of Bridge No. 54/09 carrying State Highway Route No. 14 over the tracks. At Oaklyn, New Jersey, the grade crossing at Oakland Avenue was eliminated through the construction of Bridge No. 3/69 carrying the railroad tracks over Clinton Avenue. A footway tunnel was under construction on the line of Cedar Avenue, Oaklyn, at the close of the year.

Authorizations for New Work

The Board, among a number of projects to be undertaken or completed in 1925, authorized the following larger items, estimated to cost upwards of \$4,750,000:

- Bridge over Schuylkill River at Birdsboro.
- Coaling station and engine handling facilities at Birdsboro.
- New freight and passenger car repair shops, storehouse, coaling station, ash pits, etc., at Reading.
- New passenger station and elimination of Hanover Street grade crossing at Pottstown.
- Additional freight facilities at Marcus Hook.
- Strengthening of a number of bridges between St. Clair and Philadelphia, necessitated by the use of heavier equipment.

Telephone Train Dispatching System

\$14,647.02 was expended during the year 1924 in connection with

the installation on the Reading Division of the telephone train dispatching system.

Six hundred and forty-eight miles of road have now been equipped with this system, including 53 miles on the Harrisburg Division; 140 miles on the New York Division; 38 miles on the Philadelphia Division; 211 miles on the Reading Division, and 206 miles on the Shamokin Division. In addition to telephone instruments at junction points, in towers and intermediate stations, booths have been established at lay-over sidings and other strategic points where train crews may quickly get into communication with Train Dispatchers.

Telephone train dispatching is proving more advantageous than the former system of telegraphic orders.

Automatic Train Control

On June 13, 1922, the Interstate Commerce Commission, under Finance Docket No. 13413, ordered a number of the larger railroads in the United States, including the Philadelphia and Reading Railway, to install, on a full passenger division, a system of automatic train control, and designated the line between Philadelphia and Harrisburg as the section upon which the installation should be made by the Philadelphia and Reading Railway Company.

Several proposals were made by the Philadelphia and Reading Railway Company to the Interstate Commerce Commission for the modification of the order of June 13, 1922, and on October 14, 1922, the Commission ordered that the Atlantic City Railroad Company (controlled by Reading Company) "may install an automatic train-stop or train control device upon one full passenger locomotive division, including in the part of its line herein designated," in lieu of the installation required upon the Philadelphia and Reading Railway designated in the order of June 13, 1922. The superseding order of October 14, 1922, provided for the installation of the system between Camden and Atlantic City, New Jersey, a distance of 55.2 miles.

On January 14, 1924, the Interstate Commerce Commission issued a further order directing the installation of train control devices within two years on a number of roads, including the Reading, again directing installation of the system on the line between Philadelphia and Harrisburg.

A petition for a hearing on the order of January 14, 1924, was filed by the roads and denied by the Commission.

On June 23, 1924, Reading Company petitioned the Interstate Commerce Commission for exemption from its order of January 14, 1924, on the ground that it had complied with the Commission's amended order calling for installation of the system between Camden and Atlantic City, and on the additional ground that train control systems were only in the experimental stage and a sufficient and adequate test should be made of the systems already installed before a program calling for the expenditure of large sums in installations on a greater scale is begun. This petition was denied by the Commission but without prejudice, however, to any subsequent petition which might be submitted proposing the substitution of another division for the line between Philadelphia and Harrisburg.

The installation of the train control system between Camden and Atlantic City, including equipment of Locomotives, cost \$649,442.87 to December 31, 1924.

It is estimated that to install the train control system between Philadelphia and Harrisburg would cost upwards of \$6,000,000.

Equipment

All of the equipment included in Reading Company Equipment Trust Series "K," dated March 1, 1923, to which reference was made in the last previous report, was in the service of the company at the close of the year 1924 with the exception of 32 Steel Suburban Cars, 10 Steel Suburban Combination Cars, and 10 Steel Baggage Cars. It is anticipated that this balance will be delivered and placed in service early in the year 1925.

Reading Company on December 12, 1924, applied to the Interstate Commerce Commission for authorization of assumption by the Company of obligation on account of the rental provided to redeem the \$8,000,000 par value of certificates provided to be issued under Equipment Trust Series "K," maturing serially at the rate of \$400,000 semi-annually on March and September 1st of each year, beginning March 1, 1924, and ending September 1, 1933, as well as the semi-annual interest on the outstanding certificates.

During the year 1924 the acquisition of the following additional equipment, costing approximately \$9,125,000, was arranged for through a new equipment trust, to be known as Reading Company Equipment Trust Series "L," to be dated October 1, 1924, securing an issue of \$7,500,000 of 4½% certificates:

- 1,000 Steel Gondola Cars,
- 1,000 Steel Box Cars,
- 1,000 Steel Hopper Coal Cars,
- 10 Steel Suburban Combination Cars,
- 10 Steel Baggage Cars,
- 10 Steel Baggage and Mail Cars,
- 25 Consolidation Type Locomotives,
- 5 Pacific Type Locomotives,
- 1 Steel Gasoline-Electric Motor Car.

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None of the equipment included in the Series "L" Equipment Trust had been delivered to Reading Company at the close of the year.

Reading Company expended during the year 1924 the sum of \$307,995.25 on miscellaneous items of equipment required in its operations. The principal expenditures were for ram, airbrake instruction and roadway crane cars, auto trucks, improvement of equipment already in the service, the conversion of revenue equipment into roadway equipment and for the installation of automatic train control devices on 46 passenger locomotives.

Elevators

Plans for the construction of a modern grain elevator at the Port Richmond terminal of Reading Company are in course of preparation by The Philadelphia Grain Elevator Company. These plans provide for the construction of an elevator of 2,500,000 bushels capacity to replace the present elevator of 1,500,000 bushels capacity, which was constructed in 1881. The new elevator will not only produce additional traffic for Reading Company, but will add to Philadelphia's growing importance as a grain export point.

The elevator building located at 20th and Hamilton Streets, Philadelphia, together with its contents, was totally destroyed by fire on March 11, 1924. This elevator, which served the domestic grain trade in Philadelphia, was owned by Reading Company and operated by The Philadelphia Grain Elevator Company.

Plans for the erection of a new structure at the same location were under way at the close of the year.

New Terminal at Camden, N. J.

The new terminal facilities at Camden, New Jersey, constructed for the use of the Atlantic City Railroad Company, to which reference was made in previous reports, were completed and placed in the service of that Company on May 14, 1924.

On June 30, 1924, the Atlantic City Railroad Company applied to the Interstate Commerce Commission for permission to issue to Reading Company \$3,200,000 of 30-year Purchase Money Mortgage 5% Gold Bonds, dated June 2, 1924, in partial reimbursement for the expenditures by Reading Company in the acquisition of the necessary real estate and the construction of the terminal facilities. A similar application was made to the Board of Public Utility Commissioners of the State of New Jersey.

On September 18, 1924, the Board of Public Utility Commissioners of New Jersey approved the issue of the bonds. Similar authority was granted by the Interstate Commerce Commission on October 10, 1924. In its order of October 10, 1924, the Interstate Commerce Commission also approved the guarantee by Reading Company, by endorsement on the bonds, of the principal thereof and the interest thereon.

Final settlement with the Atlantic City Railroad Company and the conveyance of the property to that Company was not concluded, however, until after the close of the year.

Federal Valuation of Railroads

Under the act of Congress approved March 1, 1913, the physical valuation of the property of Reading Company by the Interstate Commerce Commission was continued during the year 1924 at a cost to the Company of \$79,891.68.

The total expenditure incurred by Reading Company and the companies merged with it on December 31, 1923, on account of Federal Valuation was \$829,881.43 to December 31, 1924. These expenditures have been included in operating expenses.

The valuation of the Company's properties by the Commission has not been completed, nor has any tentative valuation report been received from the Federal authorities.

Swedes Ford Bridge

On July 10, 1924, the covered wooden bridge over the Schuylkill River between Norristown and Bridgeport, Pa., leased from the Swedes Ford Bridge Company, was completely destroyed by fire, and the steelwork of the railroad bridge adjoining was so seriously damaged that rail traffic over it had to be suspended. As the highway bridge at DeKalb Street, just north of the Swedes Ford bridge, had been destroyed by fire in April, 1924, the inhabitants of Norristown and Bridgeport and the surrounding territory were greatly inconvenienced, as there were no facilities for highway traffic across the river within a reasonable distance of those towns.

When the fire had subsided it was found that while the steel work on the railroad bridge was too seriously damaged for rail traffic, it could be made available for use by vehicles and pedestrians. Planking was accordingly laid and the bridge placed in condition for highway use within three days. The rail traffic, which consisted mainly of switching, was diverted to the Norristown and Main Line Connecting Railroad bridge above Norristown.

Insurance Fund

STATEMENT OF THE INSURANCE FUND FOR THE YEAR ENDED DECEMBER 31, 1924.

Cash on hand December 31, 1923.....	\$16,143.41
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RECEIPTS

Contribution to fund.....	\$120,000.00	
Amount collected from insurance companies a/c fire losses.....	107,827.09	
Interest income from bank deposits.....	913.67	
Interest and dividend receipts from security investments.....	46,117.50	
Cash received from retirement of securities owned.....	41,000.00	315,858.26
		\$332,001.67

DISBURSEMENTS

Amount paid for fire and marine losses.....	\$235,417.36	
Amount paid to insurance companies for reinsurance.....	81,641.72	\$317,059.08
Cash on hand December 31, 1924.....		\$14,942.59

ASSETS

Cash.....	\$14,942.59
Securities Owned.....	1,017,690.75
	\$1,032,633.34

LIABILITIES

Balance Reserve, December 31, 1924....	\$983,610.79
Claims unsettled.....	49,022.55
	\$1,032,633.34

SECURITIES OWNED

	Par Value	Book Value
Securities of other companies		
Cambria Iron Company, 1,000 shares.....	\$50,000.00	\$46,790.25
The Central Railroad Company of New Jersey, 300 shares.....	30,000.00	52,387.50
The Gettysburg and Harrisburg Railway Company, First Consolidated Mortgage 5% bonds.....	40,000.00	40,000.00
The North Pennsylvania Railroad Company, Funding Loan 4% bonds.....	73,000.00	73,912.50
The Philadelphia Rapid Transit Company, Collateral Trust 5% bonds.....	120,000.00	123,300.00
Reading and Columbia Railroad Company, First Consolidated Mortgage 4% bonds.....	75,000.00	75,000.00
The Washington and Franklin Railway Company, First Mortgage 5% bonds.....	160,000.00	164,800.00
Mortgages on Real Estate.....	31,500.00	31,500.50
Totals of securities of other companies.....	\$579,500.00	\$607,690.75

COMPANY'S OWN SECURITIES

Reading Company-Jersey Central Collateral Trust 4% Bonds.....	410,000.00	410,000.00
Grand Totals.....	\$989,500.00	\$1,017,690.75

Dividends

The following dividends were paid upon the shares of Reading Company during the fiscal year ended December 31, 1924, from the earnings of the Company for the fiscal year ended December 31, 1923:

Date Declared	Payable First Preferred Stock	Stock of Record	%	Amount of Dividend
	\$28,000,000			
Jan. 3, 1924.....	March 13, 1924.....	February 21, 1924...	1	\$280,000
April 16, 1924.....	June 12, 1924.....	May 28, 1924.....	1	280,000
June 12, 1924.....	Sept. 11, 1924.....	August 25, 1924....	1	280,000
Oct. 15, 1924.....	Dec. 11, 1924.....	November 25, 1924..	1	280,000
	Second Preferred Stock			
	\$42,000,000			
Dec. 5, 1923.....	Jan. 10, 1924.....	December 17, 1923..	1	\$420,000
Feb. 28, 1924.....	April 10, 1924.....	March 24, 1924.....	1	420,000
May 21, 1924.....	July 10, 1924.....	June 25, 1924.....	1	420,000
Sept. 17, 1924.....	Oct. 9, 1924.....	September 23, 1924..	1	420,000
	Common Stock			
	\$70,000,000			
Dec. 5, 1923.....	Feb. 14, 1924.....	January 22, 1924....	2	\$1,400,000
March 19, 1924.....	May 8, 1924.....	April 15, 1924.....	2	1,400,000
June 12, 1924.....	August 14, 1924....	July 21, 1924.....	2	1,400,000
Sept. 17, 1924.....	Nov. 13, 1924.....	October 20, 1924....	2	1,400,000
			8	\$5,600,000

Before declaring the quarterly dividend of 2% upon the Common Stock, payable February 12, 1925, the Board, pursuant to the terms of the issue of the First Preferred and Second Preferred shares, made provision for dividends payable during the year 1925 from the earnings of the fiscal year ended December 31, 1924, as follows:

On the First Preferred Stock the sum of \$1,120,000 was appropriated for the payment of quarterly dividends of 1% each upon that Stock, as follows:

March 12, 1925; June 11, 1925; September 10, 1925, and December 10, 1925.

On the Second Preferred Stock, a quarterly dividend of 1% was declared payable January 8, 1925, and the sum of \$1,260,000 was sent apart to make provision for the following additional quarterly dividends of 1% each upon that Stock:

April 9, 1925; July 9, 1925, and October 8, 1925.

Warrants Distributed to Stockholders

Pursuant to the Final Decree of the District Court of the United States for the Eastern District of Pennsylvania, entered June 28, 1923, pursuant to the mandate of the Supreme Court of the United States in the suit of the United States of America vs. Reading Company, et. al., Reading Company offered to its stockholders, preferred and common, share and share alike, the right to subscribe for Certificates of Interest in 1,400,000 shares of the capital stock,

without nominal or par value, of the Philadelphia and Reading Coal and Iron Corporation, a Delaware corporation formed in accordance with said Final Decree, to which corporation Reading Company has sold for the sum of \$5,600,000 all its right, title and interest in the capital stock of The Philadelphia and Reading Coal and Iron Company subject to the lien of the General Mortgage of Reading Company and The Philadelphia and Reading Coal and Iron Company.

Philadelphia and Reading Coal and Iron Corporation, in pursuance of the said Final Decree and the order entered by the District Court on December 4, 1923, modifying said Final Decree, arranged to issue from time to time the said 1,400,000 shares of stock, without nominal or par value, to the Wilmington Trust Company, of Wilmington, Delaware, as Trustee under a Trust Agreement dated December 28, 1923. The Trustee thereupon arranged to issue certain Certificates of Interest, bearing date January 2, 1924, entitling the registered owners thereof, or their assigns, upon surrender of such Certificates of Interest, accompanied by an affidavit to the effect and substance that the applicant did not then own any shares of the capital stock of Reading Company and was acting in his own behalf and good faith, to receive a stock certificate for the number of shares of the capital stock, without nominal or par value, of the Philadelphia and Reading Coal and Iron Corporation represented by such Certificates of Interest.

Each stockholder of Reading Company registered on its books at the close of business on December 17, 1923, was offered the right to subscribe for said Certificates of Interest at the rate of a Certificate of Interest in one share of stock of the Philadelphia and Reading Coal and Iron Corporation for each two shares of the stock of Reading Company, preferred or common, held by him upon the payment of the subscription price of \$4.00 for each share of the Philadelphia and Reading Coal and Iron Corporation represented by the Certificates of Interest subscribed for, this right of subscription to be exercised before January 1, 1926.

Reading Company, on or about January 10, 1924, distributed to each of its stockholders a warrant or warrants entitling such stockholders to subscribe for the Certificates of Interest proportionately to the shares of Reading Company registered in their names.

Through rulings made by the New York and Philadelphia Stock Exchanges the shares of Reading Company were bought and sold on an "x-rights" basis on January 15, 1924.

At December 31, 1924, Certificates of Interest in a total of 575,233 shares of the Coal and Iron Corporation had been subscribed, leaving an unsubscribed balance at that time of 824,767.

General Mortgage of Reading Company and the Philadelphia and Reading Coal and Iron Company

Pursuant to the provisions in the plan of segregation approved by the United States District Court June 28, 1923, Reading Company executed to the Central Union Trust Company of New York, Trustee, a General and Refunding Mortgage dated January 2, 1924, maturing January 1, 1997, secured by the property of the Company formerly pledged under the joint General Mortgage of Reading Company and The Philadelphia and Reading Coal and Iron Company dated January 5, 1897, as well as by certain additional collateral consisting mainly of shares of stocks and bonds of subsidiary railroad companies.

Approval had been given by the Interstate Commerce Commission, by order entered December 26, 1923, for the issuance by Reading Company of \$63,084,666 $\frac{2}{3}$ of 4 $\frac{1}{2}$ % Series "A" bonds under the above mortgage to retire through exchange at par a similar amount of the joint General Mortgage 4% bonds of Reading Company and The Philadelphia and Reading Coal and Iron Company issued under mortgage dated January 5, 1897, being the two-thirds allocated to Reading Company of the \$94,627,000 of joint General Mortgage 4% bonds dealt with by the plan of segregation. The amount of the Series "A" bonds to be issued was, however, reduced to \$62,723,666 $\frac{2}{3}$ through a sinking fund payment made in 1923 and specifically provided for in the plan.

On January 10, 1924, the General Mortgage bondholders were formally offered the right to present their bonds for exchange for the new separate bonds of Reading Company and The Philadelphia and Reading Coal and Iron Company on or before April 10, 1924.

By an order entered April 11, 1924, the District Court of the United States for the Eastern District of Pennsylvania directed that the offer to receive deposits of the General Mortgage bonds for exchange for the new bonds should be extended to October 10, 1924.

Owing to the inability of Reading Company to get in contact with the holders of all the outstanding General Mortgage bonds in order to acquaint them with the provisions of the segregation plan relating to their bonds, arrangement was made—with permission of the District Court—to accept for exchange, for such discretionary period as Reading Company might deem proper, any of the outstanding bonds which had not been deposited prior to the termination of the offer on October 10, 1924.

Of the \$62,723,666 $\frac{2}{3}$ General and Refunding Mortgage 4 $\frac{1}{2}$ % Series "A" bonds of Reading Company provided to be issued under the new mortgage dated January 2, 1924, \$61,666,666 $\frac{2}{3}$ had been issued to December 31, 1924.

The joint General Mortgage bonds, as they are received in exchange for the new separate bonds of the two Companies, are immediately deposited with the Trustee of the new Mortgages of Reading Company and The Philadelphia and Reading Coal and Iron Company to be held in the proper proportions as collateral under those Mortgages, until all of these bonds shall have been exchanged, at which time the bonds will be duly destroyed and the joint General Mortgage of January 5, 1897, satisfied of record.

Mortgage Bonds

On December 31, 1923, Mortgage and Collateral Trust Bonds outstanding aggregated.....\$115,795,077.65
During the year 1924 the Company purchased and placed in its Treasury securities to the amount of 739,666.67

\$115,055,410.98

Mortgages on real estate were increased through purchase of addition properties subject to existing liens 750.01

On December 31, 1924, Bonds outstanding were.....\$115,056,160.99

Equipment Trust Obligations

At the close of the fiscal year ended December 31, 1924, there were outstanding Equipment Trust obligations to the extent of \$16,040,000 issued by The Pennsylvania Company for Insurances on Lives and Granting Annuities, Trustee, under the so-called Philadelphia Plan. These obligations had been reduced during the year as follows:

	Outstanding Dec. 31, 1923	Payments During Year	Outstanding Dec. 31, 1924
Equipment Trust Series F.....	\$1,800,000	\$600,000	\$1,200,000
Equipment Trust Series G.....	3,150,000	900,000	2,250,000
Equipment Trust Series H.....	1,330,000	190,000	1,140,000
Equipment Trust Series I.....	5,400,000	600,000	4,800,000
Equipment Trust Series J.....	7,480,000	830,000	6,650,000
	\$19,160,000	\$3,120,000	\$16,040,000

Of the \$16,040,000 Equipment Trust Certificates outstanding December 31, 1924, \$5,052,000 were owned by Reading Company.

Employees' Stock Purchase Plan

On February 28, 1924, the Board of Directors of Reading Company approved the following Plan whereby employees may purchase shares of the Company through instalment payments:

1. Subscription to Shares.

Any employee of Reading Company, or of its associated or affiliated companies, may acquire through this Plan the shares of First Preferred, Second Preferred or Common Stock of Reading Company, which now operates the railroads in the Reading System. Any or all classes of stock may be ordered through one purchase, but the total cost price of shares ordered and carried at one time may not exceed twenty per cent. (20%) of the total annual salary or wages of the subscribing employee.

2. Orders to Purchase Shares.

All orders to purchase shares of the Company shall be on the form provided by the Company and must be placed through the employing officer and should be addressed to the Treasurer of the Company at Philadelphia. Each order to purchase must be accompanied by an initial cash payment in the following amount on account of each share of stock which the employee desires to purchase:

On each share of First Preferred Stock.....	\$3.00
On each share of Second Preferred Stock.....	3.00
On each share of Common Stock.....	5.00

The Company will then purchase the shares in the open market for account of the employee and will give prompt notice to the employee of the price paid and the brokerage or other charges that may be paid. Reading Company will not make any charge for its services in the purchase of shares.

3. Method of Payment.

Shares purchased under this Plan will be held by Reading Company as security for the payment of the balance of the purchase price. The payment of the balance of the purchase price may be made through monthly payroll deductions as directed by the subscribing employee; the minimum deduction to be \$2.00 per share per month on account of First Preferred or Second Preferred Shares, and \$3.00 per share per month on account of the Common Shares. The deductions in all cases will be made from the payroll for the first half of each month.

Interest at the rate of 5% per annum will be charged by Reading Company on all unpaid balances, and any dividends paid on the

shares so held will be applied on account of the interest charges or on the unpaid balance of the purchase price.

Full payments may, however, be made by the subscribing employee at any time. When final payment shall have been made certificates for the shares will be delivered to the employee. Subscriptions or contracts of purchase will not be transferable.

4. Termination of Service.

In the event of the termination of employment, or of the death of the subscribing employee, any unpaid balance due upon the subscription or contract of purchase of shares under this Plan shall, at

shares, or cash balance, will then be delivered to the subscribing employee or to his legal representatives.

5. Temporary Absence Account Disability, Furlough or Suspension of Work.

The subscribing employee may, upon proper showing, have payments suspended during such temporary absence, not to exceed four months, to be resumed upon his return to service. If the absence extends beyond four months, or if the subscribing employee is unable to resume payments upon his return to service, the Company may dispose of sufficient of the shares so held for his account at the current market price to satisfy in full any unpaid balance due on the subscription or contract of purchase, including interest, brokerage and other necessary charges, and remit to such employee any shares or cash remaining to his credit.

6. Withdrawal.

Any subscribing employee not desiring to complete his contract for the purchase of shares under this Plan may terminate such contract at any time upon due notice to his employing officer. Upon receipt of such notice the Company will sell, at current market price, sufficient of the shares held for account of such employee to satisfy in full any unpaid balance due on the subscription or contract of purchase, including interest, brokerage and other necessary charges, and will then remit to such employee any shares or cash remaining to his credit.

7. Guarantee.

Reading Company will not undertake to guarantee the subscribing employee against depreciation in the market price of its shares, which is subject to fluctuations through conditions over which the Company has no control.

8. Dividends.

All dividends paid upon shares held for account of employees subscribing under this Plan will be properly credited to such subscribing employees.

PROFIT AND LOSS ACCOUNT FOR YEAR ENDED DECEMBER 31, 1924

	Dr.	Cr.
Balance December 31, 1923.....		\$15,644,403.77
Credit Balance Transferred from Income.....		11,496,941.75
Donations.....		30,446.44
Profit on Road and Equipment Sold.....		24,755.99
Unrefundable Overcharges.....		13,586.19
Miscellaneous Credits.....		313,288.35
Dividend on First Preferred Stock.....	\$1,119,648.00	
Dividend on Second Preferred Stock.....	1,578,826.00	
Dividend on Common Stock.....	5,599,333.00	
Revaluation of Claims against Affiliated Companies.....	1,933,952.07	
Surplus Appropriated for Investment in Physical Property.....	3,150,446.44	
Loss on Retired Road and Equipment.....	400,899.52	
Miscellaneous Debits.....	47,809.65	
Balance December 31, 1924.....	13,592,507.81	
	\$27,523,422.49	\$27,523,422.49

at the option of the Company, become immediately due and payable; and if not paid upon demand therefor upon the subscriber, or, in case of his death, upon his legal representatives, the Company may dispose of sufficient of said shares at the current market price to satisfy any unpaid balances in full, including interest, brokerage charges, stamp taxes or other necessary charges. Any remaining

INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 1924, COMPARED WITH THE YEAR 1923

	1924	1923
RAILWAY OPERATING INCOME:		
Freight—Coal.....	\$36,056,193.35	\$42,842,557.13
Freight—Merchandise.....	40,860,078.35	45,480,722.40
Passenger.....	10,187,574.35	10,635,379.56
Excess Baggage.....	19,061.79	19,194.83
Parlor and Chair Car.....	5,418.63	5,410.71
Mail.....	438,441.10	409,921.79
Express.....	1,422,449.12	1,538,223.28
Other Passenger Train.....	162,502.24	177,759.59
Milk.....	433,543.44	468,242.48
Switching.....	509,574.28	879,550.92
Special Service.....	14,085.85	10,040.76
All Other Transportation.....	937,848.49	1,556,691.26
Incidental.....	1,041,487.40	1,783,736.69
	\$92,088,259.39	\$105,807,431.40
RAILWAY OPERATING EXPENSES:		
Maintenance of Way and Structures.....	\$11,289,009.78	\$10,778,239.50
Maintenance of Equipment.....	21,798,358.87	23,940,443.95
Traffic.....	840,986.54	952,082.88
Transportation.....	34,030,945.46	38,271,934.48
Miscellaneous Operations.....	137,606.53	245,908.77
General Expense.....	2,261,209.48	2,645,903.07
Transportation for Investment.....	51,560.43	75,603.66
	70,306,556.23	76,758,908.99
Net Revenue from Railway Operations.....	\$21,781,702.16	\$29,048,522.41
Railway Tax Accruals.....	\$ 4,284,017.70	\$ 4,952,591.95
Uncollectible Railway Revenues.....	6,010.17	26,239.44
TOTAL OPERATING INCOME.....	\$17,491,674.29	\$ 4,978,831.39
NON-OPERATING INCOME:		
Hire of Freight Cars—Net.....	\$ 1,169,012.15	\$ 2,254,341.77
Other Equipment Rents—Net.....	219,057.65	274,177.92
Joint Facility Rents—Net.....	87,997.18	57,214.67
	1,476,066.98	2,585,734.36
NET RAILWAY OPERATING INCOME.....	\$18,967,741.27	\$ 26,655,425.38
OTHER NON-OPERATING INCOME:		
Miscellaneous Rent Income.....	\$ 526,350.68	\$ 256,812.69
Miscellaneous Non-operating Physical Property.....	251,869.12	162,449.20
Dividend Income.....	2,590,434.23	15,955,118.23
Income from Funded Securities.....	818,479.97	477,432.80
Income from Unfunded Securities and Accounts.....	433,078.93	555,328.79
Income from Sinking and other Reserve Funds.....	34,731.17	30,654.35
Release of Premiums on Funded Debt.....	5,202.96	7,523.31
Miscellaneous Income.....	8,228.50	12,503.61
	4,668,775.56	7,457,822.98
GROSS INCOME.....	\$23,636,516.83	\$ 34,113,248.36
DEDUCTIONS FROM GROSS INCOME:		
Rent for Leased Roads.....	\$ 2,831,655.94	\$ 2,832,262.25
Miscellaneous Rents.....	2,840.24	1,954.13
Miscellaneous Tax Accruals.....	115,201.76	159,469.00
Interest on Funded Debt.....	5,213,930.04	5,059,157.80
Interest on Unfunded Debt.....	28,232.60	265,978.32
Amortization of Discount on Funded Debt.....	27,007.44	27,007.50
Miscellaneous Income Charges.....	296,332.66	381,248.32
	8,515,200.68	8,727,077.32
NET INCOME.....	\$15,121,316.15	\$ 25,386,171.04
DISPOSITION OF NET INCOME:		
Income Applied to Sinking and Other Reserve Funds.....	\$ 47,031.17	\$ 48,914.35
Income Appropriated for Investment in Physical Property:		
Additions and Betterments.....	3,577,343.23	3,624,374.40
	3,624,374.40	3,217,332.28
INCOME BALANCE TRANSFERRED TO PROFIT AND LOSS.....	\$11,496,941.75	\$ 22,119,924.41

†Includes \$3,000,000 Special Dividend received from the Reading Iron Co. in connection with the Segregation of the Coal and Iron properties.

[ADVERTISEMENT]

9. Obligation to Subscribe.

Employees are under no obligation to purchase shares of Reading Company under this Plan. The purpose of this Plan, made in response to a widely expressed desire of numerous employees, is simply to give such employees an opportunity to purchase shares of their employing Company upon easy terms of payment.

At December 31, 1924, 567 employees had subscribed for a total of 5,693 shares of the three classes of stock of the Company.

	130 Lb. Rails Tons Miles	100 Lb. Rails Tons Miles	Cross Ties
Reading Division	15,772.51 77.2	1,330.22 8.5	194,173
Shamokin Division	2,070.03 10.1	2,606.05 16.6	120,177
Wilmington and Columbia Division .....	.....	.....	28,668
Total	36,626.86 179.2	6,875.40 43.8	545,715

Pension System

Statement of operation of Pension System of Reading Company and subsidiary companies for year ended December 31, 1924:

	Pensioned During 1924			Died During 1924			Number of Pensioners December 31, 1924			Payments During Year
	CLASS A	CLASS B	CLASS C	CLASS A	CLASS B	CLASS C	CLASS A	CLASS B	CLASS C	
Reading Company	76	10	6	31	17	9	487	121	33	\$310,163.61
Atlantic City R. R. Co.	4	1	5	..	..	..	18	2	2	7,970.66
Catawqua and Fogelsville R. R. Co. ....	..	..	..	..	..	..	1	..	..	428.16
Delaware River Ferry Co. of N. J. ....	..	..	..	1	..	1	5	..	..	3,526.47
Gettysburg and Harrisburg Ry. Co. ....	..	..	..	..	..	..	1	..	..	290.40
North East Pennsylvania R. R. Co. ....	..	..	..	..	..	..	1	..	..	345.24
Peoples Railway Company	1	..	1	..	..	..	1	..	..	397.80
Perkiomen Railroad Co. ....	..	..	..	..	..	..	4	..	..	2,302.44
Phila. and Chester Valley R. R. Co.	1	..	1	..	..	..	2	1	1	2,089.52
Phila., Newtown and New York R. R. Co. ....	..	..	..	..	..	..	1	..	..	422.40
Phila., Reading & Pottsville Tel. Co. ....	..	..	..	1	..	1	2	..	..	1,321.15
Port Reading R. R. Co.	3	..	3	..	..	..	3	..	..	803.23
Reading and Columbia R. R. Co. ....	..	..	..	1	..	1	7	1	..	3,692.19
Schuylkill Navigation Co.	1	..	1	..	..	..	10	1	..	3,815.06
Stony Creek R. R. Co. ....	..	..	..	..	..	..	3	..	..	1,070.88
Total	85	11	7	34	17	9	546	126	36	\$338,639.21

Class "A"—70 years of age, 30 or more years continuous service.

Class "B"—65-69 years of age, incapacity after 30 or more years continuous service.

Class "C"—Irrespective of age and length of service, a/c incapacity resulting from injuries, etc., while in performance of duty.

New Rails and Cross Ties Used in Renewals Year Ended
December 31, 1924

	130 Lb. Rails Tons Miles	100 Lb. Rails Tons Miles	Cross Ties
Harrisburg Division	10,118.82 49.5	45.45 .2	72,356
New York Division	8,665.50 42.4	705.06 4.5	86,597
Philadelphia Division .....	..	2,198.62 14.0	43,744

Philadelphia and Reading Relief Association

The sum of \$55,111.45 was contributed by Reading Company in 1924 towards the support and maintenance of the Philadelphia and Reading Relief Association, the membership of which is composed of employees of Reading Company and subsidiary companies. This Association provides death, accident and sickness benefits for

GENERAL BALANCE SHEET DECEMBER 31, 1924

ASSETS			LIABILITIES		
INVESTMENTS			STOCK		
Investment in road and equipment	\$264,660,601.43		First Preferred	Book Liability \$28,000,000.00	Held in Treasury \$8,800.00
Improvements on leased railway property ..	20,888,359.21		Second Preferred	42,000,000.00	29,350.00
Deposits in lieu of mortgaged property sold	\$2,770,295.43		Common	70,000,000.00	10,900.00
Less Company's securities	1,923,666.67	846,628.76			69,989,100.00
Miscellaneous Physical Property	11,841,922.05	\$298,237,511.45			\$139,950,950.00
Investments in Affiliated Companies:			LONG-TERM DEBT		
Stocks	21,201,158.93		Funded Debt secured by Mortgage	Book Liability \$161,306,827.66	Held in Treasury \$69,073,666.67
Bonds	7,167,845.01		Funded Debt secured by Stock Collateral	24,295,000.00	1,472,000.00
Advances	9,982,199.85	38,351,203.79	Equipment Trust Obligations	16,040,000.00	5,052,000.00
Other Investments:				201,641,827.66	75,597,666.67
Stocks	\$27,301,309.56		Non-negotiable debt to affiliated companies ..		\$126,044,160.99
Bonds	11,264,637.85				332,701.68
Advances	83,899.58		Total Long-term Debt		126,376,862.67
Miscellaneous	367,037.20	39,016,884.19	CURRENT LIABILITIES		
Total Investments		\$375,605,599.43	Traffic and car-service balances payable ..		\$3,069,710.06
CURRENT ASSETS			Audited accounts and wages payable		5,212,372.25
Cash	\$9,866,059.09		Miscellaneous accounts payable		615,476.72
Special deposits	38,950.99		Interest matured unpaid		1,415,312.66
Loans and bills receivable	282,916.05		Dividends matured unpaid		557.00
Traffic and car-service balances receivable ..	1,444,100.55		Funded debt matured unpaid		57,888.90
Net balance receivable from agents and conductors	2,077,353.67		Unmatured dividends declared		1,819,488.50
Miscellaneous accounts receivable	2,817,974.86		Unmatured interest accrued		803,410.13
Materials and supplies	9,033,028.17		Unmatured rents accrued		265,044.33
Interest and dividends receivable	942,032.94		Other current liabilities		228,374.09
Rents receivable	29,353.85		Total Current Liabilities		13,487,634.64
Other current assets	9,275.00		DEFERRED LIABILITIES		
Total Current Assets		26,541,045.17	Other deferred liabilities		153,322.91
DEFERRED ASSETS			UNADJUSTED CREDITS		
Working fund advances	\$39,665.88		Tax liability		\$4,645,633.95
Insurance and other funds	\$1,032,633.34		Premium on funded debt		29,483.65
Less Company's securities	410,000.00	622,633.34	Insurance and casualty reserves		983,610.79
Other deferred assets	4,514.30	666,813.52	Accrued depreciation—road		1,599,356.38
UNADJUSTED DEBITS			Accrued depreciation—equipment		33,868,076.58
Rents and insurance premiums paid in advance	\$1,626.57		Other unadjusted credits		465,663.53
Discount on funded debt	202,556.31		Total Unadjusted Credits		41,591,824.88
Other unadjusted debits	3,747,878.07		CORPORATE SURPLUS		
Securities issued or assumed—unpledged	\$8,426,383.33		Additions to property through Income and Surplus		\$69,874,416.16
Securities issued or assumed—pledged	64,886,666.67		Funded debt retired through Income and Surplus		1,738,000.00
Total Unadjusted Debits		3,952,060.95	Total Appropriated Surplus		\$71,612,416.16
Grand Total		\$406,765,519.07	Profit and loss credit balance		13,592,507.81
			Total Corporate Surplus		85,204,923.97
			Grand Total		\$406,765,519.07

[ADVERTISEMENT]

its members at an exceptionally lost cost. The annual revenues of the Association are ample to meet all ordinary demands, while a substantial reserve has been set aside to meet extraordinary expenditures.

Through amendments to its regulations, effective January 1, 1924, the benefits were materially increased without extra cost to the members. The maximum amount of death benefits which any member may carry was increased to \$6,000, while the sickness benefits were increased to a maximum of \$2.50 per day and the accident benefits to a maximum of \$3.00 per day.

The Ironton Railroad Company

During the past year Reading Company and the Lehigh Valley Railroad Company jointly purchased from the Thomas Iron Company the entire capital stock of The Ironton Railroad Company, consisting of 16,000 shares of the par value of \$800,000, for the sum of \$1,500,000.

Authority for the purchase of these shares was granted the two companies by the Interstate Commerce Commission on November 8, 1923, under Finance Docket No. 3168.

Authority for the purchase was granted by The Public Service

[ADVERTISEMENT]

(Continued from page 1114)

LONG ISLAND.—1924 Earnings.—Annual report for 1924 shows net income after charges of \$1,976,114 as compared with \$1,656,129 in 1923. Selected items from the income statement follow:

LONG ISLAND			
	1924	1923	Increase or decrease
Average mileage operated	397.10	397.13	—0.03
Railway operating revenues	\$35,077,885	\$34,085,421	\$992,464
Maintenance of way	\$4,418,567	\$4,189,220	\$229,348
Maintenance of equipment	5,733,044	5,745,004	—11,960
Transportation	15,338,177	14,567,095	771,081
Total operating expenses	\$26,680,854	\$25,737,089	\$943,765
Operating ratio	76.1	75.6	0.5
Net revenue from operations	\$8,397,031	\$8,348,332	\$48,700
Railway tax accruals	1,569,734	1,788,318	—218,584
Railway operating income	\$6,803,595	\$4,001,966	\$254,999
Equipment rents dr. bal.	\$651,719	\$955,068	—\$303,349
Joint facility rents dr. bal.	1,612,883	1,591,562	21,321
Net railway operating income	\$4,538,994	\$4,001,966	\$537,028
Non-operating income	\$642,844	\$1,075,128	—\$432,284
Gross income	\$5,181,838	\$5,077,094	\$104,743
Rent for leased roads	\$178,801	\$178,801	—
Interest on funded debt	\$2,564,723	\$2,465,925	\$98,798
Total deductions from gross income	\$3,205,254	\$3,420,535	—\$215,281
Net income	\$1,976,584	\$1,656,559	\$320,025

MINNEAPOLIS & ST. LOUIS.—Receiver's Certificates.—The receiver has applied to the Interstate Commerce Commission for authority to issue \$750,000 of receiver's certificates to refund a like amount of outstanding certificates.

Abandonment.—The receiver has applied to the Interstate Commerce Commission for authority for the abandonment of the line from Van Cleve to State Center, Ia., 11 miles.

MISSOURI-KANSAS-TEXAS.—1924 Earnings.—See excerpts from annual report appearing on adjacent pages.

MISSOURI PACIFIC.—1924 Earnings.—Annual report for 1924 shows net income after charges of \$6,503,218 equivalent to \$9.05 a share on the \$71,800,100 preferred stock outstanding, or after allowance for 5 per cent dividends on the preferred, equivalent to \$3.51 a share on the \$82,839,500 common stock. Net earnings in 1923 totaled \$121,346, equivalent to 17 cents a share on the preferred. Selected items from the income statement follow:

MISSOURI PACIFIC			
	1924	1923	Increase or decrease
Average mileage operated	7,359.97	7,235.72	124.25
Total railway operating revenues	\$123,647,724	\$114,607,948	\$9,039,776
Maintenance of way	\$18,916,235	\$16,464,182	\$2,452,053
Maintenance of equipment	25,843,403	30,324,816	—4,481,413
Transportation	46,725,525	45,101,684	1,623,842
Total operating expenses	\$98,466,366	\$97,939,966	\$526,400
Operating ratio	79.9	85.1	—5.2
Net revenue from operations	\$25,181,358	\$16,667,982	\$8,513,376
Railway tax accruals	4,690,480	4,430,589	259,890
Railway operating income	\$20,445,464	\$12,185,417	\$8,260,046

Commission of Pennsylvania on August 27, 1924, under Finance Docket A. 11504-24.

The Ironton Railroad serves a number of cement and other important industries in the Lehigh Valley, centering around Catasauqua and Hokendauqua, Pa., and delivers a considerable tonnage to Reading Company and other connecting carriers. It has 12.06 miles of main track and 5.26 miles of sidings and other tracks.

Record is made of the accidental death on March 8, 1924, of Mr. Alfred H. Smith, who had been a Director of the Company from June 1, 1915, to June 19, 1918, and continuously since June 3, 1919.

Record is also made of the death on December 31, 1924, of Mr. Edwin L. Lewis, the Company's Passenger Traffic Manager. Mr. Lewis became associated with the Company in its passenger service in 1903, successfully filling every important position in his Department, and on April 1, 1922, attained the office of Passenger Traffic Manager.

The officers and employees are commended for the efficient services rendered by them during the past year.

By order of the Board of Directors.

AGNEW T. DICE,
President.

	1924	1923	Increase or decrease
Hire of freight cars, dr. bal.	\$3,375,832	\$1,893,376	\$1,482,456
Net railway operating income	\$15,817,584	\$8,893,245	\$6,924,339
Non-operating income	3,566,861	3,401,518	165,343
Gross income	\$19,384,445	\$12,294,763	\$7,089,682
Interest on funded debt	12,268,266	11,815,499	452,766
Total deductions from gross income	\$12,881,228	\$12,173,417	\$707,810
Net income	\$6,503,218	\$121,346	\$6,381,872

MISSOURI PACIFIC.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of \$35,317,000 of first and refunding mortgage 6 per cent gold bonds; for the sale of \$25,000,000 of bonds and a like amount of interim certificates to Kuhn, Loeb & Co., at 96¼; and also for the pledge of certain of the bonds as security for the interim certificates and for other purposes.

NEW ORLEANS, TEXAS & MEXICO.—Bonds.—The Interstate Commerce Commission has modified a previous order of May 23, 1924 so as to extend from June 30, 1925 to June 30, 1926 the time in which the company may issue \$13,500,000 first mortgage 5 per cent bonds, series B. These bonds were issued to retire par for par 5 per cent non-cumulative income bonds previously outstanding. Up to April 6, 1925, \$7,826,100 of the income bonds had been exchanged.

NORFOLK SOUTHERN.—1924 Earnings.—Annual report for 1924 shows net income of \$408,521, equivalent to \$2.55 a share on \$16,000,000 outstanding capital stock. Net earnings in 1923 were \$374,350, equivalent to \$2.34 a share on the common stock. Selected items from the income statement follow:

NORFOLK SOUTHERN (Including Electric Lines)			
	1924	1923	
Average mileage operated	931.88	931.45	
Railway operating revenues	\$9,291,928	\$9,386,653	
Maintenance of way	\$1,213,230	\$1,216,135	
Maintenance of equipment	1,381,759	1,501,128	
Transportation	3,693,826	3,749,064	
Total operating expenses	\$6,932,095	\$7,125,645	
Net revenue from operations	\$2,359,833	\$2,261,008	
Railway tax accruals	511,782	459,167	
Railway operating income	\$1,839,145	\$1,798,043	
Net railway operating income	Not shown		
Other income	\$76,661	\$783,769	
Gross income	\$1,915,805	\$2,581,812	
Rent for leased roads	\$158,116	\$158,116	
Interest on funded debt	871,558	874,615	
Total deductions from gross income	\$1,507,284	\$2,207,462	
Net income	\$408,521	\$374,350	

NEW ORLEANS, TEXAS & MEXICO.—Seeks to Acquire San Antonio, Uvalde & Gulf.—Rumors that the Missouri Pacific acting through the New Orleans, Texas & Mexico has acquired an option to purchase securities of the San Antonio, Uvalde & Gulf reported in the *Railway Age* of April 25, page 1068, have been

confirmed in a statement by President L. W. Baldwin of the Missouri Pacific. The statement by Mr. Baldwin said:

"The Missouri Pacific and allied lines want the property to round out the system and especially to provide adequate and dependable service between the lower Rio Grande valley and San Antonio, over its own rails. The securities of the San Antonio Uvalde & Gulf are held in two blocks of 48 per cent and a third block of 4 per cent. The Missouri Pacific has obtained an option on one of the large blocks and the small block will, if acquired, give the Missouri Pacific system 52 per cent of the securities and control of the property. It is our intention to immediately apply to the Interstate Commerce Commission for authority to exercise the option."

PENNSYLVANIA.—Stockholders Authorize Increase in Indebtedness.—At the annual election of the stockholders of the Pennsylvania Railroad Company, held on April 28 at Philadelphia, the three directors whose terms expire this year, viz., Bayard Henry and George H. McFadden of Philadelphia, and Howard Heinz of Pittsburgh, were re-elected to succeed themselves.

The stockholders also approved the authority to the board of directors to increase the company's indebtedness by \$100,000,000. The request for this authority was laid before the stockholders at the annual meeting on April 14 and was referred to a stock vote which was taken today in connection with the election of directors. As has been previously announced, the new authorization is requested in order that the directors may be in a position to meet necessary requirements as they may arise. No immediate financing is in prospect, however, and additional authorization is for the purpose of giving the board the necessary latitude of action in handling the requirements of the company from time to time.

PERE MARQUETTE.—1924 Earnings.—The condensed or preliminary annual report of the Pere Marquette Company shows for 1924 net income after charges of \$4,935,022, equivalent, after allowance for dividends on the prior preference and preferred stocks, to \$8.33 a share on the \$45,046,000 common stock. Net earnings in 1923 amounted to \$5,202,810, equivalent after allowance for the 5 per cent dividends on prior preference and preferred stocks, to \$8.92 a share. Selected items from the income statement follow:

PERE MARQUETTE			
	1924	1923	Increase or decrease
Railway Operating Revenues.....	\$41,797,915	\$45,965,737	—\$4,167,822
Total operating expenses.....	\$30,962,930	\$34,871,097	—\$3,908,167
Operating ratio	74.08	75.86	1.78
Net revenue from operations.....	\$10,834,985	\$11,094,640	—\$259,655
Railway tax accruals.....	2,028,020	1,848,822	179,199
Equipment rents net cr.....	\$919,635	\$1,625,249	—\$705,614
Joint facility rents net cr.....	678,697	520,593	158,104
Net railway operating income....	\$7,200,828	\$7,086,372	\$114,456
Other income net.....	\$406,053	\$357,191	\$48,862
Balance before deduction of interest	\$7,606,881	\$7,443,563	\$163,318
Interest on equipment notes.....	\$445,246	\$485,881	—\$40,635
Miscellaneous interest	28,653	89,898	—61,246
Interest on bonds.....	\$2,197,960	\$1,664,974	\$532,986
Total interest accruals.....	\$2,671,859	\$2,240,753	\$431,105
Surplus	\$4,935,022	\$5,202,810	—\$267,788
Dividends on prior preference stock	\$560,000	\$560,000	—
Dividends on preferred stock....	621,450	870,030	—248,580
Dividends on common stock....	1,801,840	1,351,380	450,460

SOUTHERN.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$2,000,000 of first consolidated mortgage 5 per cent bonds to redeem a like amount of first mortgage 6 per cent bonds of the Knoxville & Ohio.

SOUTHERN PACIFIC.—Authorized to Pledge Bonds.—The Interstate Commerce Commission has granted authority to the Southern Pacific Company to pledge and repledge from time to time up to June 30, 1927 as collateral security for short term notes or to sell on the best terms available but not at such prices as will yield the purchaser in excess of 5.1 per cent, all or any part of \$6,425,500 of Southern Pacific Railroad Company first refunding mortgage 4 per cent bonds. All the stock of the Southern Pacific Railroad Company is owned by the Southern Pacific Company.

TAMPA & GULF COAST.—Bonds.—The Tampa & Gulf Coast, all of the stock of which is owned by the Seaboard Air Line, has been authorized by the Interstate Commerce Commission to procure authentication and delivery of \$434,000 first mortgage 5 per cent bonds of 1953 to be pledged with the Seaboard Air Line as collateral security for loans.

TEXAS & PACIFIC.—1924 Earnings.—Annual report for 1924 shows net income of \$3,878,591 after charges, equivalent after

allowance for 5 per cent dividends on the preferred stock to \$6.94 a share on the outstanding \$38,755,110 common stock. Net earnings in 1923 were \$3,433,111, equivalent, after allowance for 5 per cent interest on the second-mortgage bonds since exchanged for preferred stock, to \$5.67 a share on the common stock. Selected items from income statement follow:

TEXAS & PACIFIC			
	1924	1923	Increase or decrease
Average mileage operated.....	1,952.74	1,952.74	—
Railway operating revenues.....	\$33,784,580	\$32,592,489	\$1,192,091
Maintenance of way.....	\$4,841,083	\$4,571,382	\$269,701
Maintenance of equipment.....	6,471,081	7,273,178	—802,097
Transportation	11,589,114	11,485,278	103,836
Total operating expenses.....	\$25,242,324	\$24,981,658	\$260,666
Operating ratio	74.72	76.65	—
Net revenue from operations.....	\$8,542,256	\$7,610,831	\$931,426
Railway tax accruals.....	1,837,500	1,430,000	407,500
Railway operating income.....	\$6,665,560	\$6,152,999	\$512,562
Hire of freight cars—Dr. bal.....	\$926,315	\$979,935	—\$53,620
Net railway operating income.....	\$5,801,611	\$5,237,535	\$564,076
Non-operating income	346,103	371,812	—25,710
Gross income	\$6,147,714	\$5,609,347	\$538,367
Interest on funded debt.....	\$2,170,339	\$1,778,841	\$391,497
Total deductions from gross income...	\$2,269,122	\$2,176,236	\$92,887
Net income	\$3,878,591	\$3,433,111	\$445,480
Disposition of net income.....			
Dividends on preferred stock.....	\$707,798	—	\$707,798
Income appropriated for investment in physical property.....	—	\$2,871,610	—\$2,871,610
Miscellaneous appropriations of income	—	561,501	—561,501
Total appropriations of income.....	\$707,798	\$3,433,111	—\$2,725,314
Income balance	\$3,170,793	—	\$3,170,793

UNION PACIFIC.—1924 Earnings.—See excerpts from annual report appearing on adjacent pages.

VIRGINIAN.—1924 Earnings.—Annual report for 1924 shows net income after charges of \$3,315,141 as compared with \$3,671,445 in 1923. The Virginian pays 6 per cent dividends on its preferred stock and 4 per cent on its common. The 1924 earnings after allowance for preferred dividends were equivalent to \$5.24 a share on the common stock. Selected items from the income statement follow:

VIRGINIAN			
	1924	1923	
Average mileage operated	545	541	
Railway operating revenues	\$18,988,439	\$20,328,348	
Maintenance of way	\$2,490,590	\$2,219,868	
Maintenance of equipment	4,077,657	5,344,302	
Transportation	5,141,383	5,536,112	
Total operating expenses	\$12,209,447	\$13,611,421	
Operating ratio	64.30	66.96	
Net revenue from operations.....	\$6,778,992	\$6,716,927	
Railway tax accruals	1,390,228	1,181,790	
Railway operating income.....	\$5,387,848	\$5,532,711	
Net railway operating income.....	Not shown	—	
Gross income	\$6,948,833	\$6,477,643	
Interest on funded debt.....	\$2,139,422	\$1,642,200	
Total deductions from gross income.....	\$3,633,692	\$2,806,199	
Net income	\$3,315,141	\$3,671,445	

WASHINGTON, IDAHO & MONTANA.—Valuation.—The Interstate Commerce Commission has issued a final valuation report as of 1917 finding the value for rate-making purposes of the common carrier property owned and used to be \$2,481,293.

Dividends Declared

Delaware & Hudson.—\$2.25, quarterly, payable June 20 to holders of record May 28.
 Illinois Central.—Common, \$1.75, quarterly, payable June 1 to holders of record May 8.
 Norfolk & Western.—Common, \$1.75, quarterly, payable June 19 to holders of record May 29.
 Pennsylvania.—1½ per cent, quarterly, payable May 29 to holders of record May 1.

Trend of Railway Stock and Bond Prices

	April 28	Last Week	Last Year
Average price of 20 representative railway stocks	77.87	77.33	62.61
Average price of 20 representative railway bonds	90.24	90.25	85.26

Railway Officers

Executive

Henry Tatnall, vice-president in charge of finance of the Pennsylvania, retired on May 1, under the pension rules of the company.

Morris Rutherford, vice-president and general manager of the Lehigh & Hudson River, has been elected president and general manager, succeeding Lewis A. Riley, deceased.

H. N. Rodenbaugh, who has been elected vice-president in charge of operation, traffic and construction of the Florida East Coast with headquarters at St. Augustine, Fla., was born on



H. N. Rodenbaugh

November 20, 1879, at Norristown, Pa., and was graduated from the University of Pennsylvania in 1901. Previous to this time he had served for a short period as assistant to the consulting engineer of the Pennsylvania. He became in January, 1902, a draftsman in the office of the chief engineer of the Norfolk & Western, and left that company in July, 1903, to go with the Alan Wood Iron & Steel Co., Conshohocken, Pa., as yard superintendent. He returned to railway service in June, 1904, as an assistant engineer in the office of the chief engineer of maintenance-

of-way and structures of the Southern, with headquarters at Washington, D. C. In October, 1905, he left the Southern to become assistant engineer of bridges and buildings on the Carolina, Clinchfield & Ohio at Bristol, Va. In June, 1906, he was appointed principal assistant engineer of the Virginia & Southwestern and in January, 1908, he left this position to become structural engineer of the Philadelphia & Reading, with headquarters at Philadelphia, Pa. He returned to the Southern in June, 1909, as an assistant engineer of bridges, serving subsequently as an engineer in charge of terminal construction, supervising engineer and principal assistant engineer in the valuation department, until July, 1918, when he was appointed engineering assistant to the regional director of the Southern region of the Railroad Administration. He was promoted to regional engineer of the Southern and Pocahontas regions in March, 1920, and served in this capacity until later in the same year when he was appointed chief engineer of the Florida East Coast. In February, 1924, he became general manager and held this position until his recent advancement.

Financial, Legal and Accounting

J. L. Scott has been appointed general claim agent of the Illinois Central, with headquarters at Chicago, succeeding **P. M. Gatch**, promoted.

A. L. Wiede, assistant auditor of freight receipts of the Northern Pacific, with headquarters at St. Paul, Minn., has been promoted to auditor of freight receipts, with the same headquarters, succeeding **W. S. Tayler**, who has retired on pension.

H. N. Quigley, whose promotion to general counsel of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, was reported in the *Railway Age* of April 11, was born on June 27, 1866, at Galion, Ohio, and was graduated from the University of Michigan in 1891. He en-

gaged in general law practice in Marion, Ohio, from 1894 to 1910 and entered railway service as assistant general attorney of the Cleveland, Cincinnati, Chicago & St. Louis, in January, 1911. Mr. Quigley was appointed attorney for Ohio in June, 1920, and in April, 1921, was promoted to general attorney. He remained in that position until his recent promotion to general counsel.

A. P. Burke, whose appointment as treasurer of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, was reported in the *Railway Age* of April 11, was born on July 20, 1864, at Perry, Ohio, and entered railway service as a telegraph operator on the Lake Shore & Michigan Southern, now a part of the New York Central, in July, 1882. He was transferred to the accounting department in May, 1891, where he remained until July, 1898, when he was transferred to the treasury department. Mr. Burke was promoted to cashier in the treasury department of the Cleveland, Cincinnati, Chicago & St. Louis in November, 1909, and held that position until his recent promotion, with the exception of the period of federal control, when he served as assistant federal treasurer.

Operating

W. C. Downing, general superintendent of the Indianapolis division of the Pennsylvania, with headquarters at Indianapolis, Ind., has been given extended jurisdiction to include the Louisville division, it and Indianapolis division having been consolidated. **C. E. Brinser**, superintendent of the Louisville division, has been appointed assistant superintendent of the Indianapolis division, with headquarters at Louisville, Ky.

E. J. Hackenberg, superintendent of the Minnesota division of the Northern Pacific, with headquarters at Staples, Minn., has been appointed superintendent of the newly created Fargo division, with headquarters at Dilworth, Minn., the new Fargo division being a consolidation of the old Minnesota and Fargo divisions. **J. H. Johnson**, acting superintendent of the Fargo division, with headquarters at Dilworth, has been appointed assistant superintendent of the new Fargo division, with headquarters at Staples, Minn.

Traffic

George Williams, whose promotion to freight traffic manager of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was reported in the *Railway Age* of March



George Williams

21, was born on July 18, 1873, in Boulder county, Colo. He entered railway service in June, 1892, as a stenographer in the passenger department of the Union Pacific. From June, 1893, to March, 1897, he was out of railway service, returning to the Union Pacific on the latter date as stenographer to the general passenger agent. He was employed in a similar capacity on the St. Louis & San Francisco in 1898, and entered the service of the Colorado & Southern in December of that year as stenographer to the vice-president. Mr. Williams was promoted to chief clerk to the traffic manager in October, 1900, and held that position until November, 1910, when he was promoted to assistant general freight agent. He was promoted to assistant general freight and passenger agent in September, 1911, and held that position until June, 1920, when he left railway service for one year. Mr. Williams was appointed general freight agent of the Denver & Rio Grande

Western in February, 1921, in which position he remained until his recent promotion to freight traffic manager.

F. C. Cheney has been appointed assistant general freight agent of the Seaboard Air Line, with headquarters at Atlanta, Ga.

R. J. Sefton, general agent of the Chicago Great Western, with headquarters at Dallas, Texas, has been promoted to general passenger agent, with headquarters at Chicago, succeeding **A. W. Noyes**, who has retired from active service.

J. A. Brown, general freight agent of the Gulf Coast Lines, with headquarters at Houston, Texas, has been promoted to freight traffic manager, with the same headquarters, a newly created position. **C. H. Guion**, assistant general freight agent, with headquarters at Houston, has been promoted to general freight agent, with the same headquarters, succeeding Mr. Brown.

H. P. Clements, general passenger agent of the Pullman Company, with headquarters at Chicago, has been promoted to passenger traffic manager, with the same headquarters, a newly created position. **E. P. Burke**, assistant general passenger agent, with headquarters at Chicago, has been promoted to general passenger agent, with the same headquarters, succeeding Mr. Clements.

W. T. Lyman, whose promotion to assistant freight traffic manager of the Wabash, with headquarters at St. Louis, Mo., has been reported in the *Railway Age*, was born on January 29, 1883, at Chicago and entered railway service as a clerk in the employ of the Reading Despatch in 1902. He was employed as a clerk on the Wabash at New York in 1905 and was promoted to chief clerk in 1908. Mr. Lyman was promoted to contracting freight agent at New York in January, 1911, and was promoted to eastbound freight agent, with the same headquarters, in July, 1916. He was transferred to Chicago as westbound freight agent in May, 1918, where he remained until March, 1920, when he was promoted to general agent, with headquarters at Boston, Mass. Mr. Lyman held that position until his recent promotion to assistant freight traffic manager, with headquarters at St. Louis.

Mechanical

J. F. Jennings, whose promotion to superintendent of motive power of the Michigan Central, with headquarters at Detroit, Mich., was reported in the *Railway Age* of April 18, was born on June 11, 1871, at Jackson, Mich. He entered railway service in September, 1891, as a locomotive fireman on the Lake Shore & Michigan Southern, now a part of the New York Central, and was later employed in a similar capacity on the Michigan Central. He was promoted to traveling fireman in February, 1903, and in January, 1904, was promoted to assistant traveling engineer. Mr. Jennings was promoted to road foreman of engines in May, 1905, and held that position until May, 1913, when he was promoted to assistant division master mechanic. He was promoted to division master mechanic at Bay City, Mich., in February, 1915, and held that position until October, 1919, when he was promoted to assistant superintendent of motive power. Mr. Jennings continued in that capacity until his recent promotion to superintendent of motive power.

Engineering, Maintenance of Way and Signaling

Hugh W. Pinkerton, assistant engineer in the electrical department of the New York Central at New York, has been appointed assistant electrical engineer of the Cleveland Union Terminal at Cleveland, effective May 1. Mr. Pinkerton will have direct charge of all of the electrical activities connected with the Union Terminal, representing Edwin A. Katte, who is consulting electrical engineer for the project.

Purchasing and Stores

D. C. Curtis, general storekeeper, lines east, of the Chicago, Milwaukee & St. Paul, with headquarters at Milwaukee, Wis., has been promoted to chief purchasing officer, with headquar-

ters at Chicago, succeeding **J. W. Taylor**, formerly vice-president in charge of purchasing and stores and, since the receivership, chief purchasing officer, who has retired from active service.

Special

E. H. Blackwell, special clerk in the pension department of the Pennsylvania at Philadelphia, has been promoted to assistant superintendent of the pension department. **J. A. Huntzinger**, special agent in the relief department, has been promoted to assistant superintendent, relief department.

Obituary

A. R. Witherspoon, general agent of the Chicago & North Western, with headquarters at Winnipeg, Man., died at Clinton, Iowa, on April 21.

W. J. Mullins, general signal inspector of the Chicago Great Western, with headquarters at Chicago, died in that city on April 25, after an operation for appendicitis.

C. H. Redington, formerly assistant treasurer of the Southern Pacific, who retired from active service in 1912, died recently in Oakland, Cal., as the result of injuries sustained when struck by a street car.

Lewis A. Riley, president of the Lehigh & Hudson River, died after a short illness at his home in Philadelphia on April 23. Mr. Riley was born on June 7, 1847, at Montrose, Pa. He was educated at academies at Montrose and Homer, N. Y., and entered railway service in 1866 with the Lehigh Valley. Later he was agent and engineer for the same road and thereafter became division engineer for the Philadelphia & Reading Coal & Iron Company. From 1872 to 1875 he was engineer and agent of the Locust Mountain Coal & Iron Company and the Coal Ridge Coal & Improvement Company. Then for five years he was engineer and superintendent of the Lehigh Valley Coal Company. In 1880 he became an independent operator under the firm name of Lewis A. Riley & Company, and owned and operated several anthracite collieries. From 1883 to 1896 he was associated with Lentz & Company, anthracite colliers. In the latter year he was elected president of the Lehigh Coal & Navigation Company, which position he held until 1907 when he was elected chairman of the board of directors of this company. Meantime Mr. Riley became a director and vice-president of the Lehigh & Hudson River in 1896 and was elected its president in 1901, which position he held until the time of his death.



Lewis A. Riley

IN A SUIT to enjoin the enforcement of an order of the State Railroad Commission reducing local one-way passenger fares from four cents a mile on main lines and from five cents a mile on branch lines to three cents a mile, the federal district court for Nevada holds that, since a carrier is entitled to be heard at the time and place fixed for the investigation in an attack on the rates, to have process to compel the attendance of witnesses, and to introduce evidence in explanation or rebuttal of that offered, the commission may not consider data (gathered from statistics published under the authority of the Interstate Commerce Commission) which have never been introduced in evidence, and of which the carrier has received no notice.—*Southern Pacific v. Bartine*, 1 Fed. (2nd) 323.